DOCUMENT RESUME

ED 027 371 VT 002 389

Titles for Technology: An Annotated Bibliography. Compiled at the 1967 Summer Institute of Technology for Children (Marlton, N.J.)

New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.

Spons Agency-Ford Foundation, New York, N.Y.

Pub Date 67

Note-107p.

EDRS Price MF-$0.50 HC-$5.45

Descriptors-*Annotated Bibliographies, *Elementary Grades, Fiction, *Industrial Arts, Occupational Information, Occupations, *Reading Materials, *Reference Books

Identifiers-New Jersey, Summer Institute Of Technology For Children, *Technology For Children Project

This annotated bibliography includes about 400 books which are suitable for use in elementary industrial arts. These books, available in the state library system of New Jersey, are organized under 50 topics such as: (1) Automation, (2) Graphic Arts, (3) Machines, (4) Space Travel, and (5) Tools and Measuring. Most of the citations are children's books; however, 28 are for professional development of elementary teachers and some are teacher references. Reading level is indicated by the classifications elementary, intermediate, and upper. This bibliography was prepared for use in the Technology for Children Project. (EM)

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TITLES

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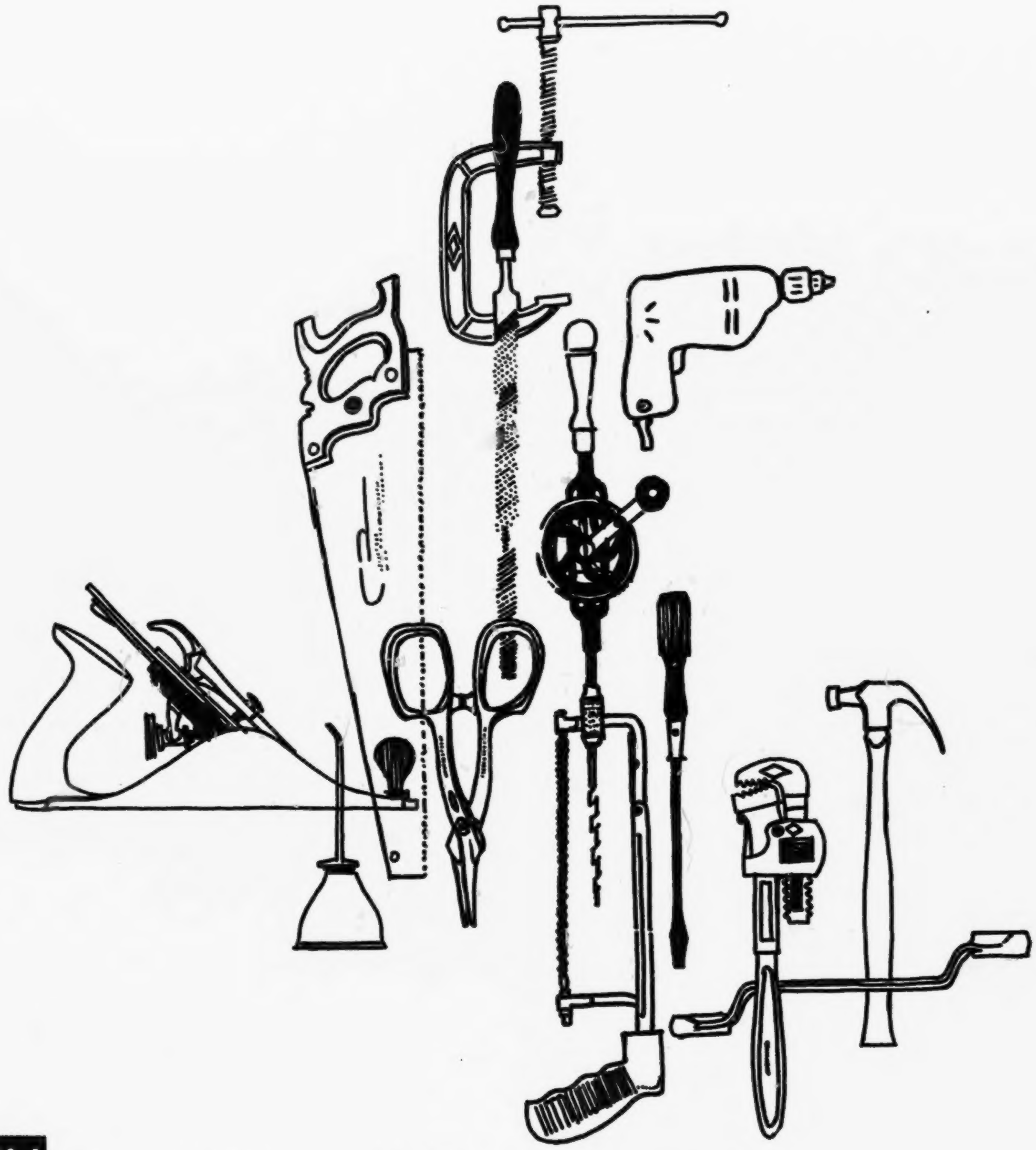

TECHNOLOGY for children project

VT002389

"Titles for Technology: An Annotated Bibliography"

Compiled at the

1967 Summer
Institute of Technology for Children

Helen L. Beeler School
Marlton, New Jersey

Sponsored by the

Division of Vocational Education
State Department of Education
225 West State Street
Trenton, New Jersey

and

The Ford Foundation

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Special thanks go to:

Mary Ann McEnroe, Library Consultant, Elementary School Section, New Jersey State Library, for all the special effort and time she willingly gave to make this a better publication and also to the elementary school teachers who took the time to evaluate each book so that those people interested might profit from their experience. The contributing teachers are: Coletta Berger, Linda Carpenter, Charlotte Conner, Sheila Gamble, Joan Gebhardt, Mary Holzschuher, Leonora Margiotta, Wilbert Mitchell, Barbara Pawlowski, Louvenia Powell, Lois Wagner, Dolores Wirth, James Yost, and Geneva Young.

E. A. S.

PREFACE

All of the books listed in this annotated bibiliography can be made available through the State Library system of New Jersey.

Each request for books should be channeled through the school librarian or the local public librarian. Should the requested books not be available through the regular collection of these libraries, each request will be forwarded by the librarian to the county library who in turn may forward it to the Public and School Library Services Bureau, New Jersey State Library, Trenton, New Jersey, when necessary.

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Elementary Industrial Arts Basic Content, Theory, and Philosophy .... Appendix I Pg. 94

List of Exhibit Books (for faculty use only) .... Appendix II Pg. 100

AIRPLANES

Agle, Nan. Three Boys and a Helicopter. New York:
Charles Scribner's Sons, 1958. 122pp.

A fictional story related to interests of adventuresome boys who became involved in doing research for construction of their own helicopter. The enthusiam for making a vehicle that flies, portrays the interest of doing it yourself. The boys experience going to the library to find out about helicopters, the terms explaining the function of the parts, and the materials used for the different parts.

Intermediate

Brooks, Walter R. Freddy The Pilot. New York: Alfred A. Knopf,
1952. 247 pp.

Enjoyable story of Freddy the pig and how he uprouted a trouble maker of Mr. Condiments Circus. Except for three, all of the speaking characters are animals. There are very few pictures. There is no technological value directly, but possible motivating value.

Primary

Bryan, Leslie. Fundamentals of Aviation & Space Technology.
Illinois: Institute of Aviation, 1962. 155pp.

This is an informative text on the history and theory of flight, aircraft engines and instruments, air navigation, meteorology, and space exploration.

Teacher Reference

Buehr, Walter. Cargoes in the Sky. New York: G. P. Putnam's
Sons, 1958. 61pp.

This book deals with air cargo from 1910 to the Berlin airlift and prospects for the future.

Good illustrations and good anecdotes of real experiences.

Intermediate

Davis, Kenneth. Flight to Glory. New York: Garden City,
1960. 56pp.

This is a story about Charles A. Lindberg and the Spirit of St. Louis. Large illustrations of the plane and parachutes make the exciting story of his flight across the ocean a great story.

Upper

Elting, Mary. Aircraft at Work. New York: Harvey House, 1964. 93pp.

This is a story of airplanes and the men who fly them. You will meet pilots who dust crops, plant forests, put out fires, and even carry zoo animals. Well illustrated.

Upper

Feravolo, Rocco. Junior Science Book of Flying. Illinois: Garrard, 1960. 64pp.

The author has written a story about the science of flying that is understandable for all. Well illustrated.

Elementary

Gardner, Jeanne. Sky Pioneers. New York: Harourt, Brace, & World, 1963. 62pp.

Throughout their boyhood, Orville and Wilber Wright experimented with tools and machines. This book tells how the boys grew to contribute many ideas to the age of flight. They put a curve in their kite, built an improved printing press, and discovered about wind resistance's affect on speed.

Intermediate

Huntington, Harriet. Cargoes. New York: Doubleday, 1964. 96pp.

This book goes behind the scenes to see the complex machinery and vast manpower needed to load and unload hundreds of thousands of tons each day.

Intermediate

McFarland, Kenton. Airplanes: How They Work. New York: Putnam, 1966. 95pp.

This book gives the answers to how and why an airplane works. It not only covers the basic principles of flight but also explains the workings of the many systems and sub-systems of an airplane in clear, understandable language.

Upper

Parlin, John. Amelia Earhart. Illinois: Garrard, 1962. 80pp.

Amelia Earhart loved exciting things when she was a child, and was determined to fly a plane. She became the first woman to fly the Atlantic Ocean and her attempt to fly around the world was a challenge to fliers everywhere.

Intermediate

Tatham, Campbell. The First Book of Flying. New York: Watts, 1948.

Simple story and text are combined to tell about airplanes and the people who fly them.

Elementary

AUTOMATION

Arnold, Pauline. The Automation Age. New York: Holiday House, 1963. 193pp.

A clear, non-technical explanation of the most rapidly changing aspect of modern life. It discusses present and future effects of automation on society, especially as it relates to young people.

Upper

Bluemle, Andrew. Automation. Cleveland and New York: World Publishing Company, 1963. 138pp.

The author traces the evolution of the three components of automation today--mechanical handling devices, "feedback" systems, and electronic computers. He explains the principles and operation of digital and analog computers, binary arithmetic, and programming. Automation is shown at work in steel, oil, chemical, and power plants, in the machine shop, on the assembly line, in banks, in control centers of transportation networks, in telephone switching systems, in retailing, and in the post office. A final section places automation in the larger framework of labor problems, leisure time, and education. Illustrated with photographs and diagrams.

Upper

Halacy, Jr., D. S. The Robots Are Here! New York: W. W. Norton & Company, 1965. 117pp.

The story of the development of machines that can "learn" to perform complicated tasks and "remember" how to repeat actions over and over. The inexpensive and accurate jobs performed by robots displace workers, and industries have to retrain men to handle different jobs.

The author describes the way in which robots work and explains the need for human brain power to make machines useful and to develop them further.

Intermediate

Hirsch, S. This Is Automation. New York: Viking Press, 1964. 128pp.

This book explains automation--what it is, how it evolved as a natural outgrowth of the Industrial Revolution, the role of the computer and how it works--and tells of the new skills needed to prepare for the changes automation is bringing in the way people live and work.

Intermediate

Lewis, Alfred. The New World of Computers. New York: Dodd, Mead, & Company, 1965. 77pp.

Tells how technological revolution got started and where it is headed; relates how computers predict elections, prepare telephone books and school report cards, route checks through banks, enables us to dial long distance, and control the flight of spaceships.

Points out the challenge that lies ahead for young people, and their needs for an education that will help them to find specialized jobs in the coming age of automation.

Illustrated with photographs.

Intermediate

Seldin, Joel. Automation. New York: Coward - McCann, 1965. 118pp.

Automation is not only a challenge to the machine, but to people. The author sets forth its blessings and its threats.

Upper

AUTOMOBILES

Alexander, Anne. ABC of Cars and Trucks. New York: Doubleday, 1956.

An easy to read book with full page pictures that uses each letter of the alphabet to mention a type of motor vehicle.

Elementary

Bowen, Robert Sidney. Hot Rod Patrol. New York: Criterion Books, 1966. 172pp.

An enjoyable story about the town's hot rod club, their search for a racing strip and their contribution to the community. It is a realistic adventure, which uses typical terminology. The book shows a conflict between rich and average wealth, a girl versus two boys, a good citizen versus poor citizenship, and boy accused wrongly of a hit and run accident.

There are no pictures and thus does not spoil the rich imagination involved. Good to interest children in automobiles, promote good citizenship, and provide enjoyable reading.

Intermediate

Cooke, David C. How Automobiles Are Made. New York: Dodd, 1957. 64pp.

This book shows automobile production from the engine's design to the dealer's showroom.

Intermediate

Corbett, Scott. What Makes A Car Go? New York: Little Brown & Company, 1963. 43pp.

This is a book of easily explained facts that tells you why your car works.

Elementary

Crouse, William. Automotive Mechanics. New York: McGraw-Hill, 1956. 726pp.

The author gives a complete course on the subject of automobile mechanics that covers theory of operation, maintenance, repair, disassembly, and adjustments of components.

Teacher Reference

Froman, Robert. Faster and Faster. New York: Viking Press, 1965. 43pp.

This book is about speed in its many forms from turtles to jets.

Elementary

Gault, William Campbell. Sunday's Dust. New York: E. P. Dutton and Company, Inc., 1966. 159pp.

Story of two young men each meeting his own challenge on the race track.

Intermediate

Gilbert, Miriam. Henry Ford Maker of the Model T. Boston: Houghton Mifflin Company, 1962. 190pp.

This is the biography of Henry Ford--emphasizing the childhood traits of character that led to his adult achievements. There are drawings on every three or four pages in two colors; the type is large. There are pictures of early models in the last section of the book, and a description of reasons leading to the assembly line.

Intermediate

Lenski, Lois. The Little Auto. London, New York, Toronto: Oxford University Press, 1934. 41pp.

A fiction about the automobile told in a primary text. A primary concept of tools and properties of materials that are part of an automobile.

Elementary

Rachlis, Eugene. Early Automobiles. New York: Golden Press, 1966. 57pp.

This book describes the inventions which had to be perfected before any practical automobile could be considered--inventions such as the steam engine and the internal combustion machine. Problems which had to be solved before a satisfactory automobile could be made were how to start an engine, how to keep fuel coming to it, how to keep the engine from overheating, how to keep a steady engine speed while the wheels were turning at another speed, and how to stop the car. This book explains how these problems were solved and also gives diagrams of the solutions. There are pictures of some of the early models--the Apperson Jack Rabbit, the Columbia Electric, the Stanley Steamer, etc. The book contains a special chapter on Henry Ford.

Intermediate

Robbin, Irving. Great Cars of All Types. New York: Grasset & Dunlap, 1960. 209pp.

This work treats the advancement of cars from the wheel to the Corvette. Models are included: Daimler, Stanley Steamer, Peugeot, Oldsmobile, Ford Bugatti, Packard, Mercedes, Locomobile, Pierce-Arrow, Cadillac, Rolls-Royce, Alfa-Romeo, Mercer, Stutz, Bentley, Citroen, Duesenberg, Lincoln, MG, Chrysler, Cord, Jaguar, Ferrari, Jeep, V.W., Porsche, Corvette. There are pictures about every three pages. The book discusses technical advances made in each car without detailed description. Emphasis seems to be on speed.

Intermediate

Yerkow, Charles. Automobiles: How They Work. New York:
Putnam, 1966. 96pp.

This book tells how a car works and includes automotive engineerings most recent advances. There is a section on safe driving.

Upper

BOATS

Colby, Carroll B. First Boat: How to Pick It and Use It for Fun Afloat. New York: Coward - McCann, 1956. 48pp.

Easy to understand drawings accompanied with a brief text, provide a practical guide for the beginner. Information on rowboats, canoes, sailboats and outboard motors is provided concerning their operation and safety.

Intermediate

Cooke, David. How Atomic Submarines Are Made. New York: Dodd, 1957. 64pp.

A concise text with ample photographs describes the building and launching of the world's first atomic submarine.

Upper

Elting, Mary. Ships At Work. New York: Harvey House, 1953. 91pp.

Many unusual ships that do specialized jobs are shown in action. The author describes the men, ships, work, and cargoes.

Intermediate

Fry, Christopher. The Boat That Mooed. New York: Macmillan Company, 1965. 28pp.

It is a quiet and unusual story of a boy who has nothing to do and no one to talk to except the pan in the kitchen because of the dense fog. His uncle does not say anything except "Good Morning", and "Good Night". He finds a girl whose father only sings. They keep their boats close together and talk to each other.

Perhaps neglected children could feel an identification; and many children imagine talking to swans and pans.

Elementary

Gramalky, Hardie. Little Toot on the Thames. New York: Putnam, 1964. 88pp.

This story is about the adventures of a fun-loving tugboat on the Thames in London.

Elementary

Latham, Jean. George W. Goethals. Illinois: Garrad, 1965. 80pp.

The story of a tamer of rivers and a great engineer. George Goethals built the Spokane River Bridge and then worked on the Panama Canal.

Elementary

Lenski, Lois. The Little Sailboat. Henry Z. Walck, Incorporated, 1960. 44pp.

This is an informative and interesting story of Captain Small and his sailboat. Descriptions of what happens in the preparation, sailing, and stormy weather are told through the story. Pictures on every other page; large lettering. Technical terms are used and clearly understood.

Elementary

Molarsky, Osmund. Piper: The Sailboat That Came Back. Connecticut: New York Graphic Society, 1965. 45pp.

A story about a little sailboat and the fun he had with the family who owned him until the sailboat is sold. Piper sinks because of his new owners carelessness and is washed ashore many years later to find his friends again.

Elementary

Zaffo, George. Big Book of Boats and Ships. New York: Grosset and Dunlap, 1951. 26pp.

Full page pictures help illustrate the simple descriptions of all kinds of boats and ships. There is a picture history of the evolution of boats and a key to flag and whistle signals.

Intermediate

BRIDGES

Bate, Norman. Who Built the Bridge? New York: Scribner, 1954.

This is a picture story of a mean river, an old bridge, and the building of a new bridge. Realistic pictures.

Elementary

Carlisle, Norman. The True Book of Bridges. Chicago: Children's Press, 1965. 46pp.

In simple text with good illustrations, the author describes many of the most beautiful and interesting bridges in the world.

Elementary

Chester, Michael. Let's Build a Suspension Bridge.

A very interesting book in useful arts in story form on how to build a suspension bridge. A brief history of the suspension bridge is given. The author explains the title of a Chief Engineer, and his specific duties and responsibilities with the aid of his many assistants. Well illustrated by Charles Dougherty.

Elementary

Harrod, Kathryn. Master Bridge Builders. New York: Julian Messner, 1958. 189pp.

This is the story of the building of the Brooklyn Bridge.

Upper

CERAMICS

Barford, George. Clay in the Classroom. Massachusetts: Davis, 1963. 118pp.

One purpose of this book is to dispel the mysteries which teachers may have about ceramics. Equipment, procedures, and methods have been adapted to the classroom situations. Most of the text is applicable to the elementary level, although some suggestions are suitable for working with older students in art classes.

Teacher Reference

Brennan, Thomas. Ceramics. Illinois: Goodheart - Willcox, 1964. 96pp.

This book will acquaint you with the many terms, tools, and procedures used in working in ceramics. This book also tells how to stack and fire the kiln.

Teacher Reference

Mitchell, Lane. Ceramics: Stone Age to Space Age. Washington, D. C.: National Science Teachers Association, 1963. 128pp.

The author investigates the origins of earthy materials and explains how the ceramic engineer processes and modifies these materials to make useful products.

Teacher Reference

Nelson, Glenn. Ceramics. New York: Holt, Rinehart, and Winston, 1966. 330pp.

This is an introduction to ceramics - its history, design, glazes, kilns, and methods. The book is good for beginners and advanced ceramic enthusiasts.

Teacher Reference

Olson, Delmar. Pottery. New Jersey: Van Nostrand, 1953. 113pp.

This book is intended to give the beginner a good start at pottery making. The topics used are hand forming, design, decorating techniques, glazing, firing, molding, and casting. Helpful diagrams.

Teacher Reference

Roy, Vincent. Ceramics. New York: McGraw-Hill, 1959. 272pp.

This book is written primarily for the beginning student of pottery. The topics presented are in the order of importance from the definition of ceramics to ceramics in everyday life.

Teacher Reference

COLOR

Carter, Katherine. My Book of Color. Ottenheimer, 1961.

This is a picture book with the text illustrating the importance of color and color combinations. It begins with the sun's rays and ends with color television.

Elementary

Freeman, Don. A Rainbow of My Own. New York: Viking Press, 1966. 30pp.

A little boy pretends that he has a rainbow to play with, and his imagination goes wild. The pictures are darling.

Elementary

Gottlieb, Suzanne. What is Red? New York: Lothrop, Lee and Shepard, 1961. 18pp.

This book very simply names the main colors and gives an illustrated example of each. Examples: Red is the color of apples, berries, fires, and a sunset.

Elementary

Healey, Frederick. Light and Color. New York: Day, 1962. 48pp.

This book tells where light comes from, how it works, and what it does. It includes experiments you can do yourself.

Elementary

Johnson, Crockett. Harold and the Purple Crayon. Harper and Brothers, 1955. 30pp.

A delightful short story about a little boy named Harold who, by using his imagination and a purple crayon, is able to adventure outside his own domain. Good illustrations.

Elementary

Johnson, Crockett. A Picture for Harold's Room. New York: Harper and Brothers, 1960. 64pp.

Harold discovers that his room needs a picture and so he starts his imaginary travels and adventures.

Elementary

Lionni, Leo. Little Blue and Little Yellow. New York: McDowell, 1959. 36pp.

This is a storybook about a blue dot and yellow dot who play together. The story would delight 3 to 6 year olds. Each page has a colored dot and one sentence.

Elementary

Neal, Charles. Exploring Light and Color. Chicago: Children's Press, 1964. 156pp.

The story of light and color is told with large color pictures and easy to read print. It discusses topics such as shadows, pinhole cameras, refraction and reflection of light, sources of light, the color wheel, color blindness and lenses.

Intermediate

Purdy, Susan. If You Have a Yellow Lion. Philadelphia: J. B. Lippincott Company, 1966. 49pp.

Colorful, large print, one line to a page. This is written in poem form and each page illustrates and tells what happens when the primary colors and black and white are mixed. Good for color experimentation.

Elementary

Rainwater, Janette. Vision: How, Why, and What We See. New York: Golden Press, 1962. 54pp.

The book explains the construction of the eye, vision tricks, color and seeing aids such as glasses, telescopes, and microscopes.

Upper

Scott, Rochelle. Colors, Colors All Around. New York: Grosset and Dunlap, 1965. 42pp.

Simple poems tell stories of the colorful objects in the world. The colors are taken one at a time, and then are mixed to get new colors.

Elementary

COMMUNICATION

Coggins, Jack. Flashes and Flags. New York: Dodd, Mead, and Company, 1963. 88pp.

An account of signals and signaling devices in everyday use - by ships, planes, trains, in sports, traffic, and weather warnings. Also a brief history of signaling. Colorful illustrations. Page of international code flags and pennants.

Intermediate

Krishef, Robert. Playback. Minneapolis: Lerner, 1962. 40pp.

This is a history of recording devices and their uses for man.

Elementary

Laffin, John. Codes and Ciphers. New York: Abelard Schuman Limited, 1964. 152pp.

Written in a simple lively style and illustrated with good maps. This simple and comprehensive history of secret writing tells fascinating stories about the use of codes and ciphers from ancient to modern times.

Upper

Latham, Jean. Samuel F. B. Morse. Illinois: Garrod, 1961. 80pp.

Samuel Morse's childhood never would have suggested his final career as a famous inventor. This book concentrates on his invention of the telegraph.

Intermediate

Nelson, Mary E. My Book of Communication. Baltimore, Maryland: Ottenheimer Publishers Incorporated, 1961. 28pp.

This is the story of communication from cave man days to modern communication.

Elementary

Posin, Daniel. What is Electronic Communication? New York: Benefic, 1961. 34pp.

The science and uses of electrons is explained in an easy to read text.

Elementary

Wells, Robert. Messages, Men and Miles. New Jersey: Prentice-Hall, 1958. 120pp.

This is the story of how man taught himself to bring his thoughts to other men. It is a tale of how modern man communicates with his neighbors.

Upper

Yates, Raymond. The Boys' Book of Communication. New York: Harper, 1942. 144pp.

The author presents the basic principles of telegraphy and telephony. Instructions are included for making telegraph instruments.

Upper

CONSTRUCTION & DRAWING

Barr, Donald. The How & Why Wonder Book of Building. New York: Grosset and Dunlap, 1964. 47pp.

This book concerning structures around the world is a composite of science, biographies, and history.

Upper

Barr, George. Young Scientist Looks at Skyscrapers. New York: Whittlesey House, 1963. 156pp.

This book traces each step in the construction process, from the digging of the foundation pit to the completed structure. Also included is information on building materials and machines; welders, riveters, steel erectors, and other men who do dangerous work. There are facts about building design, types of foundations, and zoning laws. Detailed drawings and simple experiments are offered.

Upper

Bate, Norman. Who Built the Highway. New York: Scribner, 1953.

An artistic presentation with text of big machines and how they build a highway.

Elementary

Boy Scouts of America. Drafting. New Jersey: Boy Scouts of America, 1965. 37pp.

This book discusses drafting tools, scale drawings, lettering, and careers in drafting.

Upper

Boy Scouts of America. Model Design and Building. New Jersey: Boy Scouts of America, 1964. 42pp.

Although we generally think of model building as a hobby, model construction is essential in many industries. Contents include choosing a model, using tools, and finishing your work.

Upper

Brown, Walter. Drafting. Chicago: Goodheart-Willcox, 1961. 112pp.

This book is designed to provide a broad experience in drafting and to enable one to develop the necessary skills to use drafting effectively.

Teacher Reference

Burton, Virginia. Mike Mulligan and His Steam Shovel. Boston: Houghton-Mifflin, 1939. 41pp.

This is the story of a man who is very faithful to his steam shovel, Mary Anne, and will not even desert her as the gas and Diesel-motored shovels take over most of the business.

Elementary

Colby, C. B. Earthmovers. New York: Coward-McCann, 1955. 48pp.

Examples of all the important types of big equipment used in digging, scraping, grading, rolling, and hauling are illustrated and discussed.

Intermediate

Cooper, Shriver. Drawing and Blueprint Reading. New York: McGraw-Hill, 1966. 360pp.

The author stresses the practicality of drawing as a meaningful communication. Elementary blueprint reading and simple sketching develop into industrial and electronic drawings at the end of the text.

Teacher Reference

Feirer, John. Drawing & Planning. Illinois: Bennett, 1963. 376pp.

The purpose of this book is to help young people learn how to help young people learn how to make and use drawings. The book shows how to sketch and draw for many industrial arts subjects.

Upper

Goodspeed, J. M. Let's Take a Trip to Watch a Building Go Up. New York: Putnam, 1959.

The author has presented a well illustrated text on tearing down the old and building the new to take its place.

Elementary

Gringhus, Dirk. Big Mac. New York: MacMillan, 1959.

This is the story of a bridge being built so that men may travel quickly and safely across the straits of the Mackinac in Michigan. It shows previous methods of travel as well as the bridge construction.

Elementary

Liang, Yen. The Skyscraper. New York: Lippincott, 1958. 48pp.

An easy to read book of an overcrowded city that decides to start piling houses on top of each other so they have room for some trees. The people build a skyscraper and there are very large pictures of all the machinery used in its construction.

Elementary

Lindstone, John. Building with Balsa Wood. New York: Van Nostrand, 1965. 62pp.

This book tells about Balsa Wood and then gives directions for building a plane, buildings, a rocket and a mask. The text is well illustrated with pictures of children working on the projects.

Upper

Neurath, Marie. Building Big Things. New York: Orthop, Lee and Shepard, 1958. 36pp.

This book shows the young reader many different types of construction around the world such as buildings, bridges, and dams.

Elementary

Riedman, Sarah. Let's Take a Trip to a Cement Plant. New York: Abelard-Schuman, 1959. 128pp.

Photographs illustrate the major steps in cement manufacture, the history of the cement in various types of concrete construction.

Upper

Sibley, Hi. 72 New Bird Houses You Can Make. Chicago: Goodheart-Wilcox, 1957. 80pp.

The author gives the dimensions of bird houses for different species and excellent photographs and diagrams aid in the construction of the attractive homes.

Upper

Van Doren, H. Industrial Design. New York: McGraw-Hill, 1954. 379pp.

This book is about design as a career, and some more advanced techniques are given.

Teacher Reference

EDUCATION

Division of Surveys and Field Services. Free & Inexpensive Learning Materials. Tennessee: Peabody College, 1966/67. 276pp.

Thousands of maps, posters, pictures, charts, pamphlets and other educational materials are listed by subject order. They can all be ordered for very little or no money.

Teacher Reference

Childe, Gordon. Man Makes Himself. New American Library of World Literature, New York, 1936. Revised in 1941, 1951. 192pp.

Short study of the origin and progress of man from earliest recorded history to modern times, including 19 major contributions through which man achieves mastery of his environment.

Teacher Reference

Lane, Howard. Understanding Human Development. New Jersey: Prentice-Hall, 1961. 492pp.

The theme of this book is how a cell becomes a personality. It is intended as a guide for nurturing individualism.

Teacher Reference

Micheels, William. Measuring Educational Achievement. New York: McGraw-Hill, 1950. 496pp.

This book can serve as a handbook for answering the numerous questions on testing and evaluation that besiege teachers. Among the many types of tests that are discussed are multiple choice, true-false, matching, and recall items.

Teacher Reference

Rudolph, Marguerita. Kindergarten - A Year of Learning. New York: Appleton-Century Crafts, 1964. 396pp.

This book attempts to show how teachers can teach today's children effectively in the kindergarten.

Teacher Reference

ELECTRICITY

Adler, Irving. Electricity in Your Life. New York: Day, 1965. 125pp.

The author explains the basics of electricity in a clear and concise manner, giving electricity's nature, history and many essential uses in the modern world.

Upper

Aulaire, Ingri. Benjamin Franklin. New York: Doubleday and Company, Incorporated, 1950. 48pp.

This book tells the inventions of Ben Franklin beginning with his boyhood - for example: dipping candles, kite sailboat, electricity, Poor Richards Almanac, printing. Every other page is a large colorful picture. The reading is easy for a third grade. The story would be interesting for all primary if read by teacher. It is an interesting story as well as informative.

Elementary

Beasley, Rex. Edison. New York: Chilton Books, 1964. 175pp.

This book follows Edison through his youth, middle years of success and failure, to the twilight of time and honor. The author attempts to project a living picture of the famous man and concentrate on the human aspects rather than on the creations.

Upper

Bender, Alfred. The Electron. New York: Sentinel, 1960. 128pp.

The author discusses how we get electricity from the world around us. He goes into an easy to understand detail of the electron, electro-magnet, battery, magnetism and thermoelectricity.

Teacher Reference

Bloch, Marie. *Herbert, the Electrical Mouse*. New York: Messner, 1953. 63pp.

A young boy helps his father do electrical jobs. His pet, a mouse, can also help out during the difficult task of putting a cable through a school wall.

Intermediate

Boy Scouts of America. *Electricity*. New Jersey: Boy Scouts of America, 1966. 58pp.

Magnetism, static-electricity, and electric current are discussed along with illustrated information on artificial respiration.

Teacher Reference

Eberle, Irmegarde. *Benjamin Franklin*. New York: Franklin Watts, 1961. 139pp.

A biography of Benjamin Franklin. Some illustrations.

Elementary

Faraday, Michael. *On the Various Forces of Nature*. New York: Crowell, 1957. 155pp.

This book was based on Mr. Faraday's lectures between 1859-1860. It deals with gravitation, cohesion, chemical affinity and *electricity*.

Upper

Feravolo, Rocco V. *Junior Science Book of Electricity*.

A well written book on electricity for young readers interested in knowing about electricity and how it works. Clear explanations of many electrical terms are given along with several simple experiments. Illustrated.

Elementary

Graves, Charles. *Benjamin Franklin, Man of Ideas*. Illinois: Garrard Press, 1960. 79pp.

A simple story of Ben Franklin and his kite and his efforts to end the war and write the Constitution of the United States of America.

Elementary

Hays, Wilma P. *Samuel Morse*. New York: Franklin Watts, Inc., 1966. 112pp.

A biography of Samuel Morse's life, his inventions, difficulties, success and honors.

Intermediate

Kaufman, Mervyn. Thomas Alva Edison. Illinois: Garrad, 1962. 80pp.

A biography of Edison's life and how his many jobs provided him with a good background for his inventions.

Elementary

Levine, I. Electronics Pioneer, Lee DeForest. New York: Messner, 1964. 192pp.

DeForest's first successful invention was a wireless receiver far superior to Marconi's. Then he perfected the Audion tube and paved the way for radio broadcasting and long distance telephone.

May, Charles. Michael Faraday and the Electric Dynamo. New York: Watts, 1961. 144pp.

Michael Faraday was a blacksmith's son who became one of the world's most honored scientists. Because of his electric dynamo, widespread electrical power eventually became possible.

Upper

McKown, Robin. Benjamin Franklin. New York: G. P. Putnam's Sons - 1963. 189pp.

This definitive biography traces fascinating development of an impetuous and saucy youth who became a beloved man on his native soil and throughout the world.

Upper

Notkin, Jerome. The How & Why Book of Electricity. New York: Grosset & Dunlap, 1960. 48pp.

This book includes more than a dozen experiments to help readers discover what others have found before.

Intermediate

Reuben, Gabriel. Electronics for Children. New York: Sterling Publishing Company, 1960. 88pp.

Safe experiments in fields of magnetism, electricity, electronics, and nuclear energy are given. Simple home equipment is suggested for experiments. Directions and pictures are easy to follow. The principles of the experiments are explained.

Intermediate

Shepherd, Walter. Electricity. New York: The John Day Company, 1964. 47pp.

A brief narrative on the main concepts of electricity with clear explanations of terms and with some experiments to try.

Intermediate

Sootin, Harry. Experiments. New York: Watts, 1962. 240pp.

Two hundred basic experiments concerning magnetism and electricity are clearly presented for the reader.

Upper

Steinberg, William. Electricity & Electronics. Chicago: American Technical Society, 1957. 285pp.

Information about basic electricity and electronics is presented in a direct, simple manner. At the end of each unit, there is a group of review questions. Projects mentioned are interesting and useful.

Tannenbaum, Harold. We Read About Electricity and How it is Made. New York: Webster, 1960. 24pp.

This book tells the story of how electricity is made and the daily services it performs.

Elementary

Thomas, Henry. Charles Steinmetz. New York: Putnam, 1959. 126pp.

Biography of Steinmetz. His migration to this country from Germany, the trials he encountered, his first job as an engineer and his widespread fame as a result of his genius.

Intermediate

Tottle, John. Benjamin Franklin. Chicago: Houghton-Mifflin, 1958. 192pp.

The life of Benjamin Franklin from age seven.

Upper

Waller, Leslie. A Book to Begin on Electricity. New York: Holt, Rinehart, and Winston, 1961.

A beginner's book on the discovery of electricity and how it works. It includes stories of Watson, Franklin, Volta, Dary, Bell, and Edison.

Elementary

Yates, Raymond. A Boy and a Battery. New York: Harper & Brothers, 1959. 119pp.

The author tells how to make a battery, the history of electricity and batteries, facts on electromagnetism, blown fuses, solar and atomic batteries and thermoelectric cells.

Intermediate

ENERGY

Blackwood, Paul. Push and Pull. New York: Whittlesay House, McGraw-Hill Company, Inc., 1959. 180pp.

A careful study of energy in its various forms: solar energy; energy in objects; chemical energy; energy in the human body; electrical, radiant and nuclear energy; and new sources of energy. Simple experiments are suggested and a good glossary of terms.

Upper

DeCamp, Lyon. Energy and Power. New York: Golden Press, 1962. 54pp.

This book is about how man uses animals, wind, water, heat, electricity, chemistry, and atoms to help him in his daily living.

Upper

Grey, Vivian. Secret of The Mysterious Rays. New York: Basic Books, 1966. 120pp.

The discovery of X-rays by Roentgen leads to increased interest in the human body. This is a story of the X-ray's development.

Upper

Harrison, George Russell. The First Book of Energy. New York: Franklin Watts, 1965. 81pp.

A concise book with pictures about what is energy, kinds of energy, and using energy. A glossary is included.

Podendorf, Illa. The True Book of Energy. New York: Children's Press, 1963. 41pp.

A young scientist is introduced to the importance of energy and the different kinds of energy.

Elementary

Posin, Daniel Q. What Is Energy? Chicago: Benefic Press, 1962. 48pp.

A good first book of energy with colorful pictures. Printing a good size for easy reading. Picture dictionary is in the back.

Elementary

ENGINES

de Camp, Sprague L. Engines. New York: Golden Press, 1959. 56pp.

A book which gives a complete history on engines. In this book we learn about man's use of power from the water wheel to the atomic pile. Pictures and illustrations are given for every engine discussed.

Intermediate

Epstein, Samuel. All About Engines & Power. New York: Random House, 1962. 140pp.

The author of this book tells about engines from the power of water and wind through the steam, gasoline and Diesel engines to our nuclear reactors.

Upper

Piper, Watty. The Little Engine That Could. New York: Platt and Munk, 1945. 37pp.

It is a good motivating book toward the study of trains and their use. There is mention of the passenger and freight train. The moral is one to be shared among all children. The print is large with a picture on every page.

Elementary

Williams, Ellis. Engines, Atoms, and Power. Glasgow, England: G. P. Putnam's Sons, 1958. 64pp.

Covers Benjamin Franklin and oil, John Dalton and gas, James Watt and power, heat, plastics, atoms, and nuclear power.

Intermediate

Wilson, Charles. Diesel: The Engine That Changed the World. New Jersey: Van Nostrand, 1966. 181pp.

Rudolph Diesel struggles to invent and improve his Diesel engine, and the book ends with the influence that the Diesel engine has had on the world.

Upper

ENGINEERING

Beim, Jerrold. Jay's Big Job. New York: William Morrow & Company, 1957. 46pp.

Large print and a picture on every page bring to life a realistic situation in a home. The story depicts a family working together and for themselves to repair and build around the house, when it comes time for a patio, and painting a bedroom, both father and son learn not all can be done alone.
Good ideas for technology in the home.

Elementary

Bendick, Jeanne. The First Book of How to Fix It. New York: Franklin Watts, Inc., 1961. 66pp.

The author explains how to repair various home items, accompanied by specific rules.

Intermediate

Cameron, Polly. "I Can't" Said The Ant. New York: Coward-McCann, Inc., 1961. 38pp.

Limericks that rhyme, nonsense verse, primary level. Read aloud to develop auditory discrimination for like sounds.

Elementary

Hoban, Russell. What Does It Do and How Does It Work? New York: Harper & Brothers, 1959. 62pp.

This book explains some of our heavy power equipment primarily used in road construction. Each page is illustrated beautifully with one piece of the equipment.

Elementary

Jackson, David. The Wonderful World of Engineering. New York: Garden City Books, 1960. 92pp.

Pictures and diagrams illustrate the construction of roads, airfields, bridges, canals, dams, and tunnels.

Upper

Lenski, Lois. Project Boy. Philadelphia: J. B. Lippincott Company, 1954.

Teddy Parker liked plants and growing things even though he lived in a city housing project. His trials in growing pumpkins in his front yard were many but his crop was a big one. How the children live and play very interesting.
Intermediate

Mann, Martin. How Things Work. New York: Thomas Y. Crowell Company, 1960. 141pp.

Careful explanations, with illustrations, of the way the following items function: automatic transmission, outboard motor, movie cameras, dial phones, refrigerators and air conditioners, record players and tape recorders, flourescent lamps, television receivers, and bicycle gearshifts.
Upper

McClintock, Mike. What Have I Got? New York: Harper & Bros.

A little boy finds a string. From this string he imagines he can travel, build, be a sportsman, etc. It shows to a youngster the world of imagination. The pictures are colorful. There is approximately one sentence to a page and the print is large.
Elementary

Pease, Josephine Van Dolgen. It Seems Like Magic. New York: Rand McNally, 1946. 79pp.

The author attempts to answer the many questions of children concerning everyday happenings. For example: Why does a train work? Where does oil come from? What is an echo?
Intermediate

Stirling, Nora. Wonders of Engineering. New York: Doubleday, 1966. 128pp.

Unique and "impossible" feats of engineering are pictured and discussed in this book. The examples such as the Aqua Marcia Aqueduct, St. Paul's Cathedral, and the Panama Canal show the wide expanse of engineering in today's science.
Intermediate

FIBERS

Adler, Irving and Ruth. Fibers. New York: John Day Company, 1964. 46pp.

Many different kinds of fibers are presented--flax, hemp, ramie, jute, kenaf, roselle, aramina, sisal, abaca, coir, kapok, raffia, esparto, and wool. Spinning, weaving, knitting, and ropemaking are described. Diagrams show how acetate is made. Also discussed are the man-made fibers of nylon, fiberglas, acrylic, polyester, and spandex. Fiber index.

Intermediate

Baity, Elizabeth. Man is a Weaver. New York: Viking, 1942. 334pp.

Helpful to this level student desiring to know about the history of weaving and the weaving industry in general.

Upper

GLASS

Buehr, Walter. Marvel of Glass. New York: Morrow, 1963. 93pp.

The author begins with a history of glass from its accidental discovery of glass blowing to our present age in which whole buildings are made from glass. He then writes about different kinds of glass and how it is made.

Upper

Hodges, Elizabeth. The Story of Glass. New York: Sterling, 1960. 27pp.

The author tells the story of glass throughout the ages with text and pictures. Some of the topics covered are glass blowing, ingredients to make glass, and modern uses of glass.

Upper

Huether, Anne. Glass and Man. Philadelphia: J. B. Lippincott Company, 1963.

This text provides a vivid and complete account of the history and development of glass as an art form, as a scientific tool, and as an industry. The book was illustrated with drawings by the author.

Upper

Pryor, William. The Glass Book. New York: Harcourt-Brace, 1935. 100pp.

A young boy visits a glass factory and learns how glass is made and molded. He also watches a man making a stained glass window and experiments with glass himself.

Intermediate

GRAPHIC ARTS

I.G.E.A. Story of Graphic Arts Education. Washington, D. C.: I.G.E.A., 1962. 93pp.

This is the chronological record of the origins and developments in Graphic Arts education.

Teacher Reference

Kagy, Fred. Graphic Arts. Chicago: Goodheart-Willcox, 1961. 112pp.

This book will acquaint you with the basic mechanics of various types of printing, composition fundamentals, and basic ingredients of printed pieces.

Teacher Reference

Karch, Randolph. Graphic Arts Procedures. Chicago: American Technical Society, 1957. 383pp.

The printing trades are described carefully and each of their techniques are explained with plenty of illustrations. Basic printing processes are analyzed, the differences in type faces are portrayed, and the methods of display and layout are outlined. The last chapters cover a description of the making, engraving, and printing of the finished plates.

Teacher Reference

HANDICRAFTS & HOBBIES

Adair, Margaret. Do-It-In-A-Day Puppets. New York: Day, 1964. 88pp.

Simple methods of making puppets quickly from easily obtained materials is shown, and sample scripts are given at the end.

Intermediate

Alexander, M. Weaving Handicraft. Illinois: McKnight, 1954.

The weaving devices included here are presented to give the inexperienced a taste of simple weaving. Emphasis is placed on the simplicity of the loom and fabric. Good suggestions are given for projects in the intermediate grades.

Teacher Reference

Amon, Martha. Handcrafts Simplified. Illinois: McKnight, 1961. 210pp.

Sixteen crafts are described in clear, concise, how-to-do-it language with many illustrations to help construction. Proper used of tools and mediums are up to date.

Teacher Reference

Armer, Alberta. Screwball. Cleveland and New York: World Publishing Company, 1963. 202pp.

A fiction which depicts a boy who learned how to adjust himself to accept his handicaps through the manipulation, physical and mental of tools and materials.

Intermediate

Boehm, David A. Coinometry. New York: Sterling, 1954. 91pp.

The purpose of this book is to introduce the reader not only to a fascinating hobby, but to explain the history behind various types of money. History, economics, and coin collecting are all discussed.

Elementary

Braverman, Bob & Newmann, Bill. Here is Your Hobby...Slot Car Racing. New York: Putnam, 1966. 128pp.

The information includes different scales of cars, kit building, scratch building, motors, tuning, tracks, and family hobby centers. It gives information about what a reader would want to know for his hobby. Photographs are on almost every page. An index and glossary are available. Print is large.
Intermediate

Carlson, Bernice. Make It and Use It. New York: Abington, 1958. 160pp.

The author uses step by step illustrations in showing how to create party favors, doll houses, puppets, etc. Good book for teachers and scout leaders.
Intermediate

Christopher, F. J. Basketry. New York: Dover, 1952. 108pp.

Materials, tools, terms, and directions for many kinds of reed baskets are well illustrated.
Teacher Reference

Craig, Marie. Boxes. New York: Norton, 1964. 36pp.

The author very cleverly tells the many kinds of boxes there are in the world, and what you can do with them. Well illustrated.
Elementary

Franke, Lois. Handwrought Jewelry. Illinois: McKnight, 1962. 222pp.

This is a contemporary text for beginning jewelers. It covers the basic tools and techniques in a meaningful way. Illustrations are well chosen.
Teachers Reference

Hyde, Margaret. Hobby Fun Book. New York: Seashore Press, 1952. 128pp.

This is a collection of carefully chosen, creative hobbies with pets, indoor gardens, modeling, painting, chemistry, electricity, and water.
Intermediate

Isenstein, Harald. Creative Claywork. New York: Sterling Publishing Company, 1960. 93pp.

Numerous illustrations show the hobby of clay work. Techniques are discussed with step by step directions. Geometric forms are discussed and forms from most elementary to difficult are presented.

Intermediate

Jackson, C. Paul. Tommy--Soap Box Derby Champion. New York: Hastings House, Publishers, 1963.

An excellent story about Tommy Murray's road to the All-American Championship of the soap box derby. Reference to respect of tools and good conduct in sports.

Intermediate

Kunn, Robert. 101 Toys Children Can Make. New York: Sterling Publishing Company, Inc., 1959. 124pp.

Describes 101 toys including ones for parties, farms, doll houses, transportation, target practice, musical, decorative, and useful. Illustrations, and full of ideas which could be extended to materials other than those described in the book.

Teacher Reference

Leeming, Joseph. Fun With Clay. Chicago: Spenser, 1944. 96pp.

A book that all beginners with clay will be interested in. Methods and designs for all types of modeling is included.

Lopshire, Robert. How To Make Flibbers, etc. New York: Random House, 1964. 61pp.

Colorful, fun, easy directions, practical, enjoyable--a book of 30 different ideas. There are games, growing a carrot garden, a sweet potato jungle, creative abstract art, an idea for music, printing with potato and many ideas which lead to other ideas and application.

Good for a quick enjoyable project. Materials are easily gotten and worked with.

Elementary

Wallace, Raymond. Backyard Things That Are Fun to Build.
California: Wallace, 1958. 42pp.

A clear picture of each project is given without detailed and complicated plans, so the children can create from imagination. It is an assortment of big things that boys love to build.

Intermediate

Yolen, Will. Young Sportsman's Guide To Kite Flying. New York:
Thomas Nelson & Sons, 1963. 92pp.

A book about the background of kites and the part kites have played in science and sport. Numerous illustrations, glossary and where to buy kits to build kites are included. Skip fishing and kite fishing are explained in detail.

Upper

HEAT

Adler, Irving. Heat. New York: Day, 1964. 48pp.

The author explains the kinds and uses of heat. Examples would be thermodynamics and heat of the sun.

Intermediate

Adler, Irving. Hot And Cold. New York: Day, 1959. 127pp.

In this book the author explains the puzzle of heat and cold. It describes experiments and devices and theories of temperature.

Upper

Feravolo, Rocco. Junior Science Book of Heat. Champaign,
Illinois: Garrard Publishing Company, 1964. 63pp.

This book tells what heat is, where it comes from, how it travels, how it is measured, and what it can do. Many experiments, using easily available materials, help to explain these things.

The first fires and fuels for fires are included. The parts that fire, fuel, electricity, and the sun play in making heat are demonstrated by simple experiments. Index. Large type and labeled illustrations.

Intermediate

Munch, Theodore. What Is Heat? New York: Benefic, 1960. 42pp.

Motion, energy, and heat are presented in easy to understand text and colorful pictures.

Elementary

Parker, Bertha. Thermometers. New York: Row, Peterson, 1942. 36pp.

Different types of thermometers are shown as well as the changes that take place from hot to cold.

Elementary

Sootin, Harry. Experiments With Heat. New York: W. W. Norton & Company, 1964. 87pp.

More than fifty experiments into the basic nature of heat are provided. Each experiment can be carried out at home with simple, inexpensive equipment than can be purchased in hardware stores. Accompanying each experiment are explanations of the principles and scientific history behind it. Detailed illustrations. Index. Glossary. Further reading list.

Intermediate

Williams, Jay. Danny Dunn and The Heat Ray. New York: McGraw-Hill, 1962. 144pp.

Danny Dunn has an adventure with a laser (heat ray). He sells a millionaire on the usefulness of the heat ray.

Upper

HOUSES

Adler, Irving. Houses. New York: Day, 1964. 47pp.

This book tells the story of houses from caves to apartment houses.

Elementary

Burns, William. A World Full of Homes. New York: McGraw-Hill, 1953. 118pp.

This book follows people to see how they learn to find a place to live, new materials, tools, inventions, and ideas about how to live. Unusual homes discussed are caves, trees, grass, sod, mud, brick, stone, and wood houses.

Upper

Burton, Virginia. The Little House. Boston: Houghton-Mifflin, 1950. 40pp.

A small country house watches the city move in around her. The grandchildren of her original owners find the little house and move her back to an area of farmland.

Elementary

Carter, Katherine. The True Book of Houses. Chicago: Children's Press, 1957. 45pp.

This is a picture book of houses all over the world.

Case, Bernard. Story of Houses. New York: Sterling, 1957. 48pp.

A story of the different kinds of shelter man has built as protection against outside forces. The houses differ because of the climate and terrain of the country.

Elementary

Colman, Hila. Peter's Brownstone House. New York: Morrow, 1963.

Grandpa tells Peter how the city used to be without fire engines, running water, automobiles, boat docks, and electric lights. Peter learns to be proud that he lives in a house instead of an apartment.

Elementary

Hansen, Hans Ole. I Built A Stone Age House. New York: Day, 1959. 78pp.

The author, interested in the stone age, built a house using the tools and materials appropriate to that era. Many pictures illustrate the text.

Elementary

Hoag, Edwin. American Houses. New York: J. B. Lippincott, 1964. 153pp.

A history of homes from first shelter known to man to today's lunar ambitions. Numerous illustrations covering different architecture from all over the world. Discusses how homes reflect the people that live in it.

Upper

Lenski, Lois. Let's Play House. New York: Henry Z. Walch, Inc. 18pp.

This short story is about Molly, Polly, and Peter who seem to be of different backgrounds playing house with dolls, and the different experiences involved in tending house. Good illustrations.

Elementary

Mason, Margaret. How Do You Build A House? New York: Sterling, 1953. 60pp.

This book shows the steps in constructing a house.

Elementary

Robbin, Irving. The How & Why Wonder Book of Caves to Skyscrapers. New York: Grosset & Dunlap, 1963. 43pp.

This book helps us understand man's progress in improving his home through the sweep of time.

Intermediate

Schulz, Clare Elmore. Willy Weep The Chimney Sweep. New York: Double Day & Co., Inc., 1964. 45pp.

Colorful book with pictures on every page, color pictures every two pages. The print is large. The story is a good follow-up to the study of heat, fire, etc. There are poems through the story which make it light and enjoyable. Pure enjoyment or a lead to types of homes and heat.

Elementary

Wills, Rayal. Tree Houses. Boston: Houghton-Mifflin, 1957. 67pp.

Information and instructions for building all kinds of tree houses are given, and there is a summary of common tools to use in your construction.

Upper

Wise, William. The House With The Little Red Roof. New York: Putnam, 1961. 47pp.

Jimmy finds that adjusting to a new home and friends is not as hard as he thought it might be.

Elementary

INDUSTRIAL ARTS

AIAA. Industrial Arts Technology-Past, Present, and Future. Washington, D. C.: 1967. 327pp.

This is the collection of speeches given at the 1967 AIAA Convention. Areas of special interest: Arthur Stunard's "Curriculum Resources" on page 55, Wesley Perusek's "Elementary School Industrial Arts" on page 148, and Elizabeth Hunt's "The Institute of Technology for Children" on page 224.

Teacher Reference

Gerbracht, Carl. Understanding America's Industries. Illinois: McKnight, 1962. 269pp.

This book is not written to show how tools should be used, it is written to help you learn about the major industries of our country: what they do, how they are organized, how they relate to one another.

Teacher Reference

Olson, Delmar. Evolution of Industrial Arts. New Jersey: Prentice-Hall, 1963. 367pp.

This book is a proposal for a new industrial arts. It is a discussion on subject matter, facilities, and functions.

Teacher Reference

Olson, Delmar. Industrial Arts and Technology. New Jersey: Prentice-Hall, 1963. 365pp.

This book is an attempt to place today's industrial arts within the context of today's technology. It tries to combine idealism and materialism.

Teacher Reference

INVENTIONS

American Heritage. Men of Science & Invention. New York: American Heritage, 1960. 153pp.

Excellent illustrations of technological and scientific advances made in America from colonial times on are blended with good background material.

Intermediate & Upper

Beatty, Jerome Jr. Bob Fulton's Amazing Soda-Pop Stretcher. New York: William R. Scott, Inc., 1963. 240pp.

A fiction in the area of science. Bob discovers an ingredient that eliminates friction. Spies become involved in order to steal the formula. An adventuresome story for upper elementary and/or junior high.

Intermediate

Bonner, Mary. Wonders of Inventions. New York: Lantern Press, 1961. 125pp.

Inventions of great significance and their consequences to the world at that time are illustrated in the text.

Upper

Chandler, M. H. Man The Inventor. Chicago: Rand McNally & Company, 1964. 90pp.

This is an excellent book describing man's inventive contributions from earliest to present day. It is a good reference book for children and teachers, and has wonderful illustrations.

Upper

Compere, Mickie. Story of Thomas Alva Edison, Inventor. New York: Four Winds Press, 1964. 64pp.

This book tells in large print the life of Thomas Edison, the inventor. Compere presents how Edison discovered and experimented. The pictures are large. The story is presented in an interesting manner for that age level.

Elementary

Cousins, Margaret. The Story of Thomas A. Edison. New York: Random House, 1965. 176pp.

Cousins presents the history of Edison's inventions--light, phonograph, electric locomotive, radio broadcasting, and motion pictures. The diagrams are pictures, photographs, and maps. The print is large.

Intermediate

Yates, Raymond. The Young Inventor's Guide. New York: Harper, 1959. 105pp.

There are chapters on how the young reader can prepare himself for a career as an inventor, on how to decide if an invention is practical, and on simple inventions of the past.

Intermediate

LEATHER CRAFT

Mannel, Elise. Leathercraft Is Fun. Milwaukee: Bruce, 1952. 94pp.

This book should be especially helpful to leaders of craft groups. All of the projects are easy enough for children to make.

Teachers Reference

Zimmerman, Fred. Leathercraft. Chicago: Goodheart-Willcox, 1961. 96pp.

This book will acquaint you with the tools, terms, and procedures of carving and stamping leather.

Upper

LIGHT

Beeler, Nelson. Experiments With Light. New York: Crowell, 1957. 143pp.

An important book for suggestions concerning science fairs and extracurricular activities in the field of light.

Upper

Corbett, Scott. What Makes a Light Go On? New York: Little, Brown & Company, 1966. 56pp.

Book describes where electricity comes from to light a bulb in easy to understand language. Also tells what happens in the wires and in the bulb itself.

Upper

Farguhar, Margaret. Lights. New York: Holt, Rinehart, Winston, 1960. 46pp.

This text tells about the procession of lamps and lighting devices from the torches used in caves to the fluorescent lamps of today.

Elementary

Feravolo, Rocco. Junior Science Book of Light. Illinois: Garrard, 1961. 60pp.

This book is a general book about the importance and mysteries of light. Some of the topics are shadows, bending light rays, colors, and lenses.

Elementary

Gates, Arthur. Keepers of The Lights. New York: Macmillan, 1960. 33pp.

The lighthouse keeper has an important job of guiding ships away from the rocks and shore. This book describes the inside of the lighthouse and how the light works.

Intermediate

Freeman, Ira. Light & Radiation. New York: Random House, 1965. 142pp.

Well illustrated book on many aspects of light explained in non-technical way. Glossary and discussion about inventions clarify certain difficult concepts.

Upper

Harrison, George R. The First Book of Light. New York: Watts, 1962. 83pp.

The author attempts to answer many questions about warmth, growing things, the source of light, and travel and reflection of light.

Upper

Herbert, Don. Beginning Science With Mr. Wizard: Light. New York: Doubleday, 1960. 32pp.

This text deals with the various properties of light and its many uses.

Upper

Highland, Harold. The How and Why Wonder Book of Color and Light. New York: Grosset and Dunlap, 1963. 48pp.

A text about light and color with a number of experiments to guide the reader in making discoveries.

Upper

Klein, H. Masers & Lasers. New York: Lippincott, 1963. 184pp.

The book discusses the construction and uses of masers and their even more amazing younger relatives, the lasers. It is an excellent survey of modern physics from Newton through today.

Upper

Munch, Theodore W. What is Light? New York: Benefic, 1960.
42pp.

This book explains many of the scientific principles of light and its behavior.

Elementary

Pine, Tillie S. Light All Around. New York: Wittlesay, 1961.
47pp.

An easy to read approach to the properties of light. This book introduces the reader to color, reflection, shadows, etc.

Elementary

Shapp, Martha. Thomas Alva Edison. New York: Watts, 1966. 59pp.

This book follows Tom from his early childhood to his days of inventions. There are many pictures and the print is large.

Elementary

MACHINES

Adler, Irving. Machines. New York: Day, 1964. 47pp.

The author explains simple machines and how they work. It continues on to electric power, mass production, and automation.

Intermediate

Atteberry, Pat. Power Mechanics. Chicago: The Goodheart-Wilcox Company, Inc., 1961. 94pp.

This book shows how power machines affect you and shows the development of power heat engine operating principles and how jets and rockets work. Wonderful illustrations and photographs and a good dictionary of terms.

Upper

Buehr, Walter. The First Book of Machines. New York: Franklin Watts, Inc., 1962. 49pp.

Beginning with a pioneer background, the author develops simple machines, complex machines, their uses from the inclined plane through "thinking" machines. There are two color pictures frequently through the book. Both table of contents and index are included. Comparisons of modern us. Early days occur frequently. A good beginner and organization source.

Intermediate

Dines, Glen. The Mysterious Machine. New York: Macmillan Company, 1957. 140pp.

It is the story about a boy scientist and his problems of people accepting his invention.

Elementary

Elting, Mary. Machines At Work. New York: Harvey House, 1962.

A pictorial with text about all kinds of machines that help man do his work. It talks about machines that dig, hammer, push, pick corn, etc.

Elementary

Greene, Carla. *I Went To Be A Mechanic*. New York: Children's Press, 1959.

The intention of this book is to encourage independent reading and to provide a better understanding of the mechanics around us.

Parker, Bertha. *You As A Machine*. New York: Row, Peterson, 1958. 36pp.

The author compares the workings and needs of the human body with that of a machines.

Elementary

Pine, Tillie. *Simple Machines & How We Use Them*. New York: McGraw-Hill, 1965. 48pp.

Using the six simple machines, the author has shown the young reader how work is made easier.

Slepian, Jan. *Alfie and The Dream Machine*. Chicago: Follett Publishing Company, 1964.

The Listen Hear books provide teachers and parents with an entertaining and simple method of speech improvement. This is an imaginative and enjoyable story.

Elementary

Victor, Edward. *Machines*. Chicago: Follett Publishing Company, 1962. 32pp.

Well illustrated book of simple machines. Included is a vocabulary list in the back.

Elementary

Williams and Abrashkin. *Danny Dunn and The Homework Machine*. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1958. 141pp.

Story about a boy and his adventures with a computer.

Intermediate

Zaffo, George. *Big Book of Real Building and Wrecking Machines*. New York: Grossett, 1951. 25pp.

Full page pictures and an easy to read text will make this a popular book. Large machines used in construction work are featured.

Elementary

MAGNETS

Adler, Irving. Magnets. New York: John Day Co., 1966. 48pp.

This book is a concise explanation of the reaction of magnets—both man-made and natural. It explains the atoms in different magnetic materials and shows some experiments. There is an index of terms. The diagrams are simple and yet complete. This would be beneficial as a supplementary science book.
Intermediate

Feravolo, Rocco. Junior Science Book of Magnets. Champaign, Illinois: Garrard Press, 1960. 64pp.

Tells what a magnet is, how it works, and how it has changed our world. Several experiments with simple instructions.
Upper

Keen, Martin. The How And Why Wonder Book of Magnets And Magnetism. New York: Grosset & Dunlap, 1963. 48pp.

Concepts of the nature of magnetism, earth as a magnet, electromagnetism, electromagnets in use, and magnets in communication are developed. Colorful illustrations, easy text, and easy experiments are at a child's level.
Elementary

Knight, David. Let's Find Out About Magnets. New York: Franklin Watts, Inc., 1967. 55pp.

This book describes the Greek source as found in lodestone. Description of various kinds of magnets and pictures are included. David Knight gives experiments and practical applications in every uses eg., close refrigerator door.

Pictures are on every other page and done in two colors.
Elementary

Pine, Tillie S. & Joseph Levine. Magnets And How To Use Them. New York: McGraw-Hill Company, 1958. 47pp.

This book is introduced with questions to be solved,e.g., "What part of the magnet is the strongest?" It then, through experiments on every page, explains and illustrates the answers. There are pictures on every page combining red, black, and white. The experiments could be useful in primary grades, though reading could extend into the intermediate grades. There is treatment of practical uses for magnets in the home.
Elementary

Podendorf, Illa. The True Book of Magnets and Electricity. New York: Children's Press, 1961. 47pp.

This book shows the young reader the relationship between electricity and magnets and their uses.

Elementary

Reuben, Gabriele. What Is A Magnet? Chicago: Benefic Press, 1959.

Magnets are explained in full. Several experiments that would interest children are illustrated and explained.

A picture dictionary in the back is interesting.

Intermediate

Yates, Raymond F. The Boy's Book of Magnetism. New York: Harper Brothers, 1941. 161pp.

A delightful book telling about magnets and numerous experiments and games using magnets. Many illustrations included showing how to construct games which would keep children occupied for hours and involves great skill in some.

Show close relationship of magnetism and electricity, building an electromagnet.

Elementary

MAPS

Branley, Franklin M. North, South, East, and West. New York: Thomas Y. Crowell, 1966.

This book defines the points of the compass and relates them to everyday life for the young explorer. The author shows that learning to tell directions can be fun. Boys and girls can trace their shadows, following his clear instructions, and learn to locate east and west. Reading a map and using a compass are introduced. Illustrated. Easy-to-read text.

Elementary

Epstein, Sam. First Book of Maps & Globes. New York: Watts, 1959. 63pp.

It introduces different kinds of maps and their uses from road maps to nautical charts.

Intermediate

Fisher, Irving. World Maps & Globes. New York: Essential Books, 1944.

Qualities of good map projections are discussed along with map distortions. Triangular grids, and longitude - latitude.
Teacher Reference

Hammond & Company. The First Book of Atlas. New York: Watts, 1960. 96pp.

Maps of states, islands, and continents all over the world picture rivers, streets, and products produced in each.
Intermediate

Hathway, James A. Maps and Map-making. New York: Golden Press, 1966. 57pp.

This book begins with a history of maps and map-making. It describes the various measurements man has devised for measuring distance--the pace, the league, the inch-foot-mile system, the Metric System and others.

Different projections used by map-makers to picture the earth are described and pictured. Samples of the military, political, product, road, and weather maps are shown in the illustrations. Also pictured are some of the symbols used in making topographic maps. Colored illustrations. Index.
Upper

Raisz, Erwin. General Cartography. New York: McGraw-Hill, 1948. 354pp.

The history of maps, discussion of scales and projections and directions for lettering and composing maps makes this book a good reference for teachers.
Teacher Reference

Raisz, Erwin. Mapping The World. New York: Abeland-Schuman, 1956. 111pp.

The history of maps and map-makers, up to the modern-day map makers.
Upper

Rinkoff, Barbara. A Map Is A Picture. New York: Crowell, 1962. 36pp.

The author describes different types of maps: town, state, country, and world. Then she explains how to make a detailed map of your neighborhood.
Elementary

MATHEMATICS

Adler, Irving. The Tools of Science. New York: Day, 1958. 128pp.

This is a review of the kinds of tools used by scientists. It moves from pendulums to the synchrotron.

Upper

Barr, Donald. Arithmetic for Billy Goats. New York: Harcourt, Brace, & World, Inc., 1966. 108pp.

Barr presents a story about Billy Goat to show confusion in counting up out numbers. He shows how names "one," "two," etc. are useful. Then the author develops multiplication and division in story form. The reading level is Intermediate, but the understanding would need guidance of a teacher. The print is average size of black and white illustrations. This is a good supplementary arithmetic book for a gifted child.

Intermediate

Bendick, Jeanne. Take Shapes, Lines, and Letters. New York: Whittlesay, 1962. 78pp.

A bridge of mathematical ideas stretching from the ancient Greeks to the mathematicians of today is explained to the reader. Mathematics in art, music, and everyday life are a few of the areas touched upon.

Intermediate

Eichenburg, Fritz. Dancing In The Moon. New York: Harcourt, Brace & World, Inc., 1955.

Numbers to 20 different animals performing in a delightful way. Animals should be loved by the children.
Excellent for teaching names of animals.

Elementary

Feravolo, Rocco. Wonders of Mathematics. New York: Dodd, Mead & Company, 1963. 64pp.

"The story of mathematics--from early Egyptian and Greek numbers to the usefulness of decimals and fractions interspersed with simple activities and problems for the young reader to try on his own."

Intermediate

Francoise. Jeanne-Marie Counts Her Sheep. New York: Charles Scribner's Sons, 1951. 30pp.

This story is about a little girl who plans what would happen if her sheep, Patapon has one-up-to ten sheep. Counting is done through the story and the source of wool is emphasized.

Colorful pictures on every other page; large print.

Elementary

Gardner. Archimedes. New York: The Macmillan Company, 1965. 41pp.

This delightful book tells the story of the life and work of that ancient Greek mathematician, scientist, and inventor. Illustrated.

Upper

Land, Barbara. The Quest of Isaac Newton. New York: Garden City Books, 1960. 56pp.

The authors treat Isaac Newton by telling of his light ray experiment first. Then the book relates Newton's Scientific Method. His laws are treated briefly giving examples of use today, of his failures, his struggles, his quiet nature.

There are illustrations on almost every page.

Intermediate

Myller, Rolf. How Big Is A Foot? New York: Atheneum, 1962. 30pp.

A good introduction to measuring, showing one way to determine a foot length. The book is done in red and white with a picture on each page. It is the story of a king who wanted to give the queen a bed for her birthday. It relates the difficulty the apprentice with small feet had when he measured for the bed because the king's feet were big.

Elementary

Prochaska, R. C. Mathematics: The Language of Science. New York: G. P. Putnam's Sons, 1961. 72pp.

Author's main point is that mathematics is the handy and precise language that scientists use to express relationships and make comparisons between very different things. Tells how our civilization developed its counting system, the beginnings of geometry. Helpful diagrams and pictures.

Intermediate

Ravielli, Anthony. An Adventure In Geometry. New York: Viking, 1957. 117pp.

The purpose of this book is to stimulate interest in geometry by relating its form to the beauty of nature. The drawings and diagrams are the outstanding features of the book.

Upper

Russell, Solveig Paulson. Lines And Shapes: First Book of Geometry. New York: Henry Walck, Inc., 1965. 31pp.

A brief description of well-known shapes and lines in daily life. Black and white pictures accompany it.

Upper

METALS

Bollinger, J. Fun With Metalwork. Milwaukee: Bruce Publishing Co., 1958. 184pp.

This text supplies a whole avenue of new shop project designs and ideas. There is a large section devoted to silhouettes.

Upper

Boy Scouts of America. Metalwork. New Jersey: Boy Scouts of America, 1966.

The mining and refining of metal is followed by bencework projects and tin can craft.

Upper

Boyd, Gardner. Metalworking. Chicago: Goodheart-Willcox, 1961.

This book includes information on planning, designing, safety, bench and sheet metal. Hand tool operations are stressed.

Teacher Reference

Brindze, Ruth. The Story of Gold. New York: Vanguard, 1955. 64pp.

Several independent stories are combined to give the history and uses of gold. The stories are arranged in time sequences from cave man to our gold brick storage in Fort Knox.

Upper

Feirer, John. General Metals. New York: McGraw-Hill, 1952. 257pp.

Sections on bench metal, wrought iron, sheet metal, art metal, jewelry, and many others are covered. The book discusses principles of good design and general occupational information.
Teacher Reference

Fraser, Roland. General Metals. New York: Prentice-Hall, 1955. 244pp.

The book includes vocational guidance and the opportunity to develop manipulative skill and acquired technical knowledge.
Teacher Reference

Judson, Clara. Andrew Carnegie. Chicago: Follett Publishing, 1964. 158pp.

Andrew Carnegie's life is told from his poverty-stricken childhood through his final years as "the steel king." He gave away to worthy causes most of the great fortune he had accumulated.
Upper

MacGregor, Ellen. Miss Pickerell and the Geiger Counter. New York: McGraw-Hill Book Co., 1953. 123pp.

A fiction about a geologist who discovers uranium. The book establishes a background of information for understanding properties of various types rock. Clear vocabulary, easy to read type are geared to the Junior High level.
Intermediate

Newcomb, Elizabeth. Miracle Metals. New York: Putnam, 1962. 181pp.

This is a history of man's accomplishments in the field of metals.
Upper

Pearl, Richard. The Wonderful World of Metals. New York: Harper & Row, 1966. 115pp.

This is an easy to understand description of the earth's metals. New vocabulary words are in heavy type, and a metals quiz is at the end of the book.
Upper

Siegner, Vernon. *Art Metals*. Chicago: Goodheart-Willcox, 1961. 96pp.

This book is for the metal working beginner. It provides an opportunity for becoming familiar with metalworking tools, developing safe practices, and understanding how raw materials are converted into finished products.

Teacher Reference

Smith, Robert. *Etching, Spinning & Tooling Metals*. Illinois: McKnight & McKnight, 1951. 87pp.

The units in this book give information about metals, tools and equipment, and tell how to perform the various operations in working metal by etching, spinning, raising and tooling it.

Teacher Reference

Walker, John. *Modern Metalworking*. Chicago: Goodheart-Willcox, 1965. 26pp.

The author supplies basic information on tools, materials, and procedures used in metalworking operations.

Teacher Reference

OIL

Brooks, Anita. *Picture Book of Oil*. New York: Day, 1965. 94pp.

The history of oil is revealed by the author in order to show its story today. It tells about oil's discovery, refining, and delivery.

Upper

Buehr, Walter. *Oil! Today's Black Magic*. New York: Morrow, 1957. 86pp.

The author begins with the explanation of how oil is formed in the ground and then moves on to describe the history of oil. From this point the more technical aspects of exploration, drilling, and refining are explained to the reader.

Upper

Buehr, Walter. *Underground Riches*. New York: Morrow, 1958. 95pp.

This is the story of mining and its problems. Metals discussed are gold, coal, and iron.

Intermediate

Cooke, David. Behind the Scenes at the Oil Field. New York: Dodd, 1959. 64pp.

This book tells the story of how oil is found and brought to the surface and refined into products which we use every day of our lives.

Upper

Date, Norman. Who Fishes for Oil? New York: Scribners, 1955. 46pp.

The author handles off-shore drilling in this book by following a shrimp boat who decides to do something different than catch shrimp.

Gringhus, Dirk. Rock Oil to Rockets. New York: MacMillan, 1960. 28pp.

This is the story of petroleum from Colonel Drake's discovery in Pennsylvania to the present day off-shore drilling for oil.

Elementary

Lewis, Alfred. The New World of Petroleum. New York: Dodd, 1966. 80pp.

You will learn about the many products that come from the processing of crude oil.

Upper

Mauzey, Merritt. Oilfield Boy. New York: Abelard-Schuman, 1957. 80pp.

The Oilfield Boy is Albert Clay, and we join him in the oil-fields to learn the worker's special language, ancient methods of drilling, producing, and transportation.

Upper

Narling, Jo & Ernest. Pogo's Oil Well - Story of Petroleum. New York: Holt Renehart & Winston, 1955. 58pp.

This tells about drilling for oil. It is in story form. Pogo, the dog, scraped the dirt where the father started to drill. A full black and white picture is on every other page. The print is large. John and Pogo learn the way oil was formed, is refined, and how it is used.

Intermediate

Petersham, Maud. Simplified Petroleum Chemistry and Physics. California: Petroleum Educational Institute, 1943. 122pp.

Fundamentals in chemistry and physics are told in simple language. Topics discussed are gravity, temperature, boiling point, absorption, and distillation.

Teacher Reference

Petersham, Maud. The Story Book of Oil. Chicago: Winston. 31pp.

This book shows the history and uses of oil.

Intermediate

PAPER

Buehr, Walter. Magic of Paper. New York: William Morrow & Company, 1966. 96pp.

The author shows what was used before paper was discovered and the development of paper thru primitive stages to what it is today. Future plans for paper are discussed such as paper houses, insulate wire of paper, and paper table tops. The print is large and pictures are three colors.

Intermediate

Cooke, David. How Paper Is Made. New York: Dodd, Meade & Company. 64pp.

An excellent description of the process of making paper. It is written for the intermediate child so he can understand the various stages in the papermaking process.

Intermediate

Meyer, Jerome. Paper. New York: World Publishing Company, 1960. 91pp.

Primitive ways of making paper are told. The process of how methods have changed to modern methods is developed. Pictures and story tell the steps of the modern methods of paper making - tree to newspaper.

Intermediate

PHOTOGRAPHY

Barry, Les. Getting Started in Photography.

Most of the book is about cameras although it does cover film and gives some points on taking pictures. The part on cameras is very good in that it gives a good description of the different types of cameras.

Teacher Reference

Eastman Kodak Company. Adventures in Picturetaking. New York: 1964. 33pp.

In these pages you'll read about tools and techniques for expanding your photographic horizons. You will find many ways to improve your pictures and to have more enjoyment with a wonderful hobby.

Teacher Reference

Eastman Kodak Company. Copying. New York: 1962. 48pp.

Information on lighting, exposure, and processing is given in this book for copying graphs, diagrams, negatives, prints, paintings, fabrics, and other materials.

Teacher Reference

Eastman Kodak Company. Enlarging. New York: 1967. 56pp.

This book tells you how to make sharp, well-exposed, and well-composed enlargements from your negative, both black and white and color.

Teacher Reference

Eastman Kodak Company. How To Make Good Pictures. New York: 1967. 190pp.

This book is about pictures and some of the features that make pictures better than run-of-the-mill. It is nontechnical and very helpful to the amateur.

Teacher Reference

Eastman Kodak Company. Kodak Films in Rolls. New York: 1965. 26pp.

The information in this book is presented to help you understand the properties of negative materials and to facilitate the proper selection and use of black and white films in rolls.

Teacher Reference

2

Eastman Kodak Company. Negative Making. New York: 1966. 35pp.

This book is concerned with films for the professional photographer. It discusses film usage and presents facts and figures on specific films.

Teacher Reference

Eastman Kodak Company. Photographic Papers. New York: 1965. 32pp.

This book is presented to help you understand photographic papers, select them appropriately, and use them well.

Teacher Reference

Eastman Kodak Company. Photography Through the Microscope. New York: 1966. 75pp.

The purpose of this book is to discuss briefly some of the problems involved in making photomicrographs with a compound microscope at low, medium, and high magnifications.

Teacher Reference

Eastman Kodak Company. Photolab Design. New York: 1967. 66pp.

This book is written with a broad concept of design in mind. There are sections on planning, layout, and work flow. Examples of processing rooms are also featured.

Teacher Reference

Fenton, D. X. Better Photography for Amateurs. New York: Universal, 1963. 128pp.

This book is aimed at the amateur who knows something about photography and is fairly good but wishes to be excellent. It discusses types of film to use and special effects that you can use to vary your pictures.

Teacher Reference

Freeman, Mae. Fun With Your Camera. New York: Random House, 1955. 55pp.

This book is designed for the beginner with his first camera. It covers many helpful pointers on shooting good pictures.

Intermediate

Gillelan, G. Howard. The Young Sportsman's Guide to Photography. New York: Nelson, 1964. 95pp.

The author discusses all types of cameras from the simplest to the most complex and tells how to get the best results from each.

Gottlieb, William. Phototgraphy. New York: Knopf, 1953. 44pp.

A basic book about taking better pictures.

Elementary

Gottlieb, William. Real Book About Photography. New York: Garden City Books, 1957. 188pp.

A book on photography which could very well be used as a beginner's text on photography. The camera is well explained and illustrated. Special directions are given on taking various poses and animal shots. Valuable points on the care of your camera and picture storage. Well illustrated.

Komroff, Manuel. Matthew Brady. Chicago: Encyclopedia Britannica Press, Inc., 1962. 187pp.

Biography of Matthew Brady, America's best known photographer in the 20th Century. Brady was famous for the technical advances he contributed to photography, as well as the pictures he took. Some of the photographs which won metals are shown in this book.

Weisbord, Marvin. Basic Photography. New York: Chilton Company, 1959. 141pp.

The author wrote this book for anyone who's ever taken a picture and wished it were a better one.

Teacher Reference

PHYSICS

Adler, Irving. Things That Spin. New York: Day, 1960. 47pp.

It begins with a spinning top, explains the earth's rotation, and finishes with the importance of atoms.

Elementary

Adler, Irving. *The Wonders of Physics*. New York: Golden Press, 1966. 166pp.

Text and pictures move from the simplest of physics concepts to the unfamiliar ones.

Upper

Campbell, Rosemae. *Tops & Gyroscopes*. New York: Crowell, 1959. 168pp.

This book tells the story of the gyroscope and how it evolved from the study of the top. It also elaborates on the many uses of gyroscopes in ships, airplanes, submarines, and rockets.

Upper

Clark, Mary Lou. *You and Relativity*. Chicago: Children's Press, 1965. 61pp.

This book deals with "one's frame of reference." Time, motion, up, and other concepts are not absolute. Several pictures are included, print is quite small.

Intermediate

Feravolo, Rocco. *Easy Physics Projects: Air, Water, Heat*. New Jersey: Prentice-Hall, 1966. 103pp.

The author has presented almost 50 projects to help the reader grasp the physical properties of air, water, and heat.

Elementary

Harris, Norman. *Introductory Applied Physics*. New York: McGraw-Hill, 1955. 729pp.

This is a discussion of the various aspects of physics with their practical applications stressed. Each chapter is followed by a review summary.

Teacher Reference

King, Fred M. *What Is Gravity?* Chicago: Benefic Press, 1960. 48pp.

This book uses many colorful illustrations to show the effect of gravity. It covers weather and rockets.

Elementary

Mann, A. L. Famous Physicists. New York: Day, 1963. 157pp.

This is the story of nine early pioneers in science and how their discoveries have made present day living more enjoyable.

Upper

Schneider, Herman. Now Try This. New York: Scott, 1947. 40pp.

The author gives the basic principles of friction, leverage, and the inclined plane. It also shows how to move a heavy object using these tools.

Elementary

Wyler, Rose & Gerald Ames. What Makes It Go? New York: McGraw-Hill, 1958. 64pp.

Tells of different kinds of transportation from bicycles and wagons to rockets and how they work. Black and white pictures with several showing working models. A glossary is included.

Intermediate

PLASTICS

Buehr, Walter. Plastics The Man-Made Miracle. New York: William Morrow & Company, 1967. 96pp.

The author gives the history of plastics and then develops the manufacturing of plastics today. There are many uses for plastics, of all kinds, in today's world and the author looks into the future of plastic. The print is large and vocabulary is fit for intermediate level. The pictures and diagrams are three colors.

Intermediate

Cherry, Raymond. General Plastics. Illinois: McKnight, 1967. 315pp.

The author covers the fabrication of plastics with hand and power tools, and suggests practical and attractive objects to construct.

Teacher Reference

Colby, C. B. Plastic Magic. New York: Coward-McCann, Inc., 1959. 48pp.

This book describes the uses and properties of plastics and the various methods of making plastic products and compression molding. It has many illustrations and seems to be quite informative.

Upper

Cope, Dwight. Plastics. Illinois: Goodheart-Willcox, 1966. 96pp.

This course on plastics describes cutting, sanding, polishing, heat forming, castings, and machining procedures.

Teacher Reference

Jolliffe, Anne. From Pots to Plastics. New York: Hawthorne Books, Inc., 1965. 32pp.

This book takes the development of technological tools and materials from Stone Age to Present Day rockets. It mentions chemical change by heat, different ways of making heat thru discovery of atoms, rubber, drugs, and rockets. Every page has modern, colorful pictures, especially attractive to primary grades. It was a story book that 2nd grade or advanced 1st grade could read. The story would be interesting for primary. The history would be easy for slower intermediate grades.

Elementary

Lappin, Alvin. Plastics: Projects & Techniques. Illinois: McKnight, 1965. 136pp.

Projects are presented in order from simple to complex problems. Diagrams and photographs illustrate the projects and their jigs.

Teacher Reference

Newcomb, Ellsworth. Miracle Plastics. New York: G. P. Putnam's Sons.

Story tells how less than a hundred years ago a young chemist in search for a substitute for ivory came up with a material called celluloid.

This was the beginning of the plastics industry.

Illustrations and diagrams are in black and white.

Upper

Swanson, Robert. Plastics Technology. Illinois: McKnight, 1965. 232pp.

This book explains how to work with plastics and describes the processes by which raw materials are converted to finished products.

Teacher Reference

PRINTING

Cooke, David. How Books Are Made. New York: Dodd, 1963. 63pp.

The reader is guided through the publisher's office and follows the step by step manufacture of a book. Type setting and printing plates are made; pictures of the huge presses are displayed.

Intermediate

Epstein, Sam. First Book of Printing. New York: Watts, 1955. 62pp.

It gives a history of printing from movable type to electronic engravers and photo typesetters. The three most widely used processes of reproduction are explained step by step.

Upper

Faber, Doris. Printer's Devil To Publisher. New York: Julian Messner, Inc., 1963. 183pp.

Personal anecdotes about Adolph S. Ochs, publisher of The New York Times. Written for older readers. Bibliography and index.

Upper

Kafka, Francis. Linoleum Block Printing. Illinois: McKnight, 1955. 84pp.

This book gives the basic information required for practicing the art of printing with a linoleum block. There is a list of projects and good photographs.

Teacher Reference

Lieberman, J. Printing As A Hobby. New York: Sterling, 1963. 128pp.

The author gives you all of the fundamentals you need to start printing, helpful hints, and suggestions as to where to get supplies.

Upper

RUBBER

Eberle, Irmengarde. The New World of Rubber. New York: Dodd, Mead, & Co., 1966. 80pp.

The author explains the history of discovering and developing rubber, how rubber is grown on plantations, how rubber is manufactured, and the many uses of rubber today -- auto, airplane, rockets, industry, cables, computers, etc. The print is average size. The book is illustrated by photography.

Intermediate

SCIENCE

ACEI. Science for the 8-12's. Washington, D.C.: Association of Education International 64. 56pp.

This bulletin offers topics by different authors. What is Science? What are middle-grade children like? How well have we taught? Selecting materials for Science learning? Different experiments with Physical and Chemical Forces, Earth, living things, environment are sandwiched thru the bulletin. Pictures are B & W.

Teacher Reference

ACEI. Young Children and Science. Washington, D.C.: ACEI, 1964. 56pp.

This bulletin has articles by different authors explaining what science is for the young child and how adults can play a vital role in this child's learning experience. Pictures are B & W. Science experiments and questions that children will ask are sandwiched thru the bulletin.

Teacher Reference

Barr, George. Young Scientist and the Fire Department. New York: McGraw-Hill, 1966. 143pp.

A book written for youngsters on the science of fire fighting. Principles of fire are introduced and applied to situations familiar to children.

Intermediate

Bendrick, Jeanne. The Shape of the Earth. New York: Rand McNally and Co., 1965. 72pp.

This book gives a short theory of how the earth began and changes. It involves the history of discovering the earth. There are brown, black and white pictures and illustrations on almost every page. The print is large. The language is technical, but the author offers both explanations and a dictionary.

Intermediate

Fogel, Barbara. What's the Biggest? New York: Random House, 1966. 113pp.

The author explores the "meaning of size" in the world around us. He shows the things that hold the records for being the BIGGEST -- buildings, animals, telescopes, caves, etc. He presents questions and then answers the question. The print is large. The sketches are black and white.

Elementary

Freeman, Mae. A Book of Real Science. New York: Four Winds Press, 1966. 48pp.

This book answers questions which interest young readers in electricity, light, heat, outerspace, gravity, etc. Each chapter ends with a question. The pictures are orange and black. The print is big.

Elementary

Freeman, Mae. Your Wonderful World of Science. New York: Random House, 1959. 83pp. Illustrated.

An introduction to astronomy which presents basic facts in an easy to read text. Some of the experiments are illustrated.

Grades: Elementary

Gourlay, Walter. Picture Book of Today's Scientists. New York: Sterling Publishing Co., 1966. 64pp.

The findings of famous scientists with portraits of them and their most famous findings: Von Braun, Woodward, Salk, Oppenheimer, etc.

Upper

Leaf, Munro. Science Can Be Fun. New York: J.B. Lippincott, 1958. 48pp.

Principles dealing with our earth, air, plants, electricity, magnets and liquids are presented in easily understood pictures and words.

Elementary

Mandell, Muriel. Science for Children. New York: Sterling, 1959. 96pp.

This book primarily deals with air, water, mechanical energy, heat, and sound with many experiments to illustrate the facts.

Grades: Elementary

Martin, Charles. The Universe of Science. Hill and Wang. New York: 1961. 208 pp.

This book is directed to the educated man who wants to keep in touch with recent process as well as to the young person who wants to learn all he can of the world in which he lives -- from microcosm to macrocosm.

Teacher Reference

Vergara, William. Science, the Never-Ending Quest. New York: Harper and Row, 1965. 434 pp.

This book explains the basic ideas behind scientific discoveries from early days to the present, showing how they relate to each other and to man's progress and needs.

Teacher Reference

Watso, Jane. The World of Science. New York: Simon and Schuster, 1958. 216 pp.

The author tries to communicate some of the excitement of science, stimulate imaginations, and increase the desire to know more about Geology, Astronomy, Mathematics, Physics, Biology and Engineering.

Teacher Reference

SCIENCE EXPERIMENTS

Barr, George. Research Adventures for Young Scientists. New York: McGraw-Hill, 1958. 142pp. Illustrated.

It provides easy-to-do experiments in various fields of science. It gives the reader an opportunity to get the feel of research.

Grade: Intermediate

Beeler, Nelson. More Experiments in Science. New York: Crowell, 1950. 176pp.

The experiments in this book use only very simple equipment. The directions are concise and easy to follow.

Intermediate

Bradley, Duane. Here's How It Works. New York: Lippincott, 1962.

This text deals with many phases of science (air, water, light, sound, motion) and then provides experiments to illustrate the lessons to be learned.

Grades: Upper

Herbert, D. Mr. Wizard's Experiments for Young Scientists. New York: Doubleday & Co., Inc., 1959. 187pp.

A book of experiments for young "potential" scientists. It is designed to aid creative thinking in youngest. Each category of scientific study designates for the youngster the methods of procedure. Very simple, inexpensive equipment will make concepts about the environment and phenomena of behavior of elements more meaningful.

Upper

Holland, Marion. A Big Ball of String. New York: Random House, 1958. 64pp.

A little boy goes to a junkyard and starts to make a ball out of the string he finds. The story is told in poem form.

Elementary

Kadesch, Robert. The Crazy Cantilever and Other Science Experiments. New York: Harper & Bros., 1961. 175pp.

Forty experiments on subjects such as pendulum patterns, centrifugal force, pinhole camera, magnification, electricity, and gravity are described and illustrated for inexpensive and easy to get materials.

Intermediate

Keen, Martin. The How and Why Wonder Book of Science Experiments. New York: Grosset and Dunlap, 1962. 48pp.

Principles and experiments dealing with air, water, sound and astronomy are presented. Illustrations and text are at a child's interest level. Experiments are easy and done with common materials found in the home.

Elementary

Kleinman, Louis. Easy Science Experiments. New York: Hart Publishing Company, 1959. 192pp.

Experiments with air, heat, natural forces, electricity, water, light, sound, chemicals, and the human body are developed in this book. Directions and illustrations for experiments are at a child's level of interest and understanding.

Intermediate

Lotspeich, William D. How Scientists Find Out. Boston: Little, Brown, and Co., 1965. 140pp.

A book by an author who is both physician and physiologist. The book aims to tell, through real cases how discoveries are made by research workers; how ideas lead to experiments and how the results of experiments came to be called "discoveries."

Upper

Lynde, Carleton. Science Experiments with Home Equipment. New York: International Textbook Company, 1949. 230pp.

The author illustrates 200 experiments that can easily be done in the home.

Grades: Upper

Marcus, Rebecca. Galileo and Experimental Science. New York: Franklin Watts, 1961. 126 pp.

Biography of Galileo and the contributions he made in the development of modern science. The areas of astronomy, physics, instrument-making owe much to this great man.

Upper

McKnown, Robin. Marie Curie. New York: G.P. Putnam's Sons, 1959. 128pp.

A biography of a scientist, who with her husband, was the discoverer of radium. As a result of her work, the study of physics and chemistry was revolutionized.

Upper

Newbury, Norman. The Junior Scientist. New York: Sterling Publishing Company, 1962. 96pp.

Experiments dealing with light, air, simple machines, simple circuits, storms and weather, gravity, and the human body are developed. Colorful pictures and questions to guide learning make the book interesting to a child.

Intermediate

Newbury, Norman. The Young Experimenter. New York: Sterling Publishing Company, 1960. 96pp.

Simple things you take for granted, such as: air, water, trees, flowers and birds, hold mysterious secrets that become clear as you put your probing, scientific mind to work to solve problems presented in this book. Experiments, illustrations and directions are on a child's level.

Intermediate

Podendorf, Illa. 101 Science Experiments. Chicago: Children's Press, 1960. 155pp.

The author gives experiments which cover the following fields: Air, magnets, electricity, water, sound, light, simple machines, heat, chemistry, plants. The print is big; the many pictures and diagrams are colorful.

Elementary

Podendorf, Illa. The True Book of More Science Experiments. Chicago: Children's Press, 1956. 47pp.

Author gives simple experiments of light, machines, inertia, ice, water, evaporation. They offer the basic principles in a "fun" experiment. The pictures are big and colorful. The print is large.

Elementary

Posin, Dan. Find Out! New York: Golden Press, 1964. 54pp.

This book touches on astonomy, spectroscopes and how they work, the earth's atmosphere and water, bursts of energy and atoms, tools for finding out how things work, and vehicles for finding out.

Elementary

Schlein, Miriam. A Pile of Junk. New York: Abelard, 1962. 46pp.

An old lady who collects junk decides to start giving it away to children. She clears it out of her house, and the pile of junk is gone by the next day.

Elementary

Sootin, Harry. The Young Experimenter's Workbook. New York: Norton, 1965. 59pp.

Fifty inexpensive experiments concerning substances of the earth are well illustrated. Some of the experiments include an acid test, water and soil tests, etc.

Stockard, Jimmy Jr. Experiments for Young Scientists. Boston: Little, Brown & Company, 1964. 86pp.

This book consists of simple experiments using items found around the house. Included are air, water, simple machines, sound, light, magnets, and electricity. There is a glossary of key words. It was written "with the hope that it may give young people a greater understanding of the world of scientific phenomenon." It tells what materials are needed, how to do the experiment, what happens, and why.

Intermediate

Stone, George K. Science Projects You Can Do. New Jersey:
Prentice-Hall, 1963. 101pp.

A book of 101 science projects for the beginner are presented with clear diagrams.

Intermediate

Straight, Gerald. The Young Scientist's Reader. New York:
Hart Book Company, Inc. 126pp.

This book is interesting for youngsters interested in astronomy, chemistry, botany, mathematics, and radio. Simple home experiments and science magic are included. Well illustrated.

Wyler, Rose. Prove It! New York: Harper & Row, 1963. 53pp.

This book deals with experiments in water, air, sound, and magnets. These experiments can be made with items such as wax paper, soap, pepper, and sugar. Illustrated.

Elementary

SENSES

Adler, Irving & Ruth. Taste, Touch, and Smell. New York:
John Day Company, Inc., 1966. 48pp.

This book treats the senses of taste, touch, and smell. The author explains the electrical network inside a body, pain and medical means of combating pain, facts and theories about smell. The diagrams are clear, complete, and simple. There is an index of terms.

Intermediate

Bevans, Margaret van Doren. "I Wonder Why?" Thought The Owl.
New York: G. P. Putnam's Sons, 1965. 41pp.

A fiction that illustrates reactions of alarm, suspicion, and fear shown by man when he does not understand about animals or birds in his environment. Illustrations, printing large and legible.

Elementary

Borton, Helen. Do You Move As I Do? New York: Abelard - Schuman.

A child sees movement all around him. This book is to challenge the child's senses and increase his awareness of the beauties in the world around him.

Elementary

Borten, Helen. Do You See What I See? New York: Abelard - Schuman, 1959. 42pp.

Although the coloring is poor, the story is very good for introducing or capsuling shapes, lines, color, and a beginning to look at the world in terms of shapes.

The author introduces line, shape, color, square, triangle, rectangle, and relates each to something in the world e.g. triangle is found in the head of a fox. Good non-text explanation of shapes as geometric introduction.

Elementary

Fisher, Aileen. I Wonder How, I Wonder Why. New York: Abelard - Schuman, 1962.

A child wonders about many things. To him the world is new and everything he sees stirs his imagination.

Questions asked, Where does a road go? How do the sun and moon know when to shine?

Enjoyable verses to be read to children.

Elementary

Macpherson, Elizabeth. The Wonderful Whistle. New York: G. P. Putnam's Sons, 1965. 48pp.

A fiction in which a little boy discovers how to whistle various tunes during his pre-school years. The concept of sound involves quality, pitch, and intensity.

Elementary

Neurath, Marie. Too Small To See. New York: Sterling, 1956. 36pp.

The author illustrates many interesting facets that are unnoticed in various animals. Examples are: the brush and comb of the common fly, strange tongues, etc.

Elementary

Sands, George. Why Glasses? New York: Lerner, 1960. 30pp.

The author, a medical doctor, explains how our eyes work and the importance of glasses.

Elementary

Schloat, G. Warren. Andy's Wonderful Telescope. New York: Scribner, 1958. 48pp.

This is basically a book of pictures that show a boy and his telescope and the wonderful things he discovers.

Intermediate

Showers, Paul. The Listening Walk. New York: Thomas Y. Crowell Company, 1961. 36pp.

On a walk, a boy discovers over twenty different common sounds often taken for granted. Sounds are illustrated well. Large print and short sentences are geared to primary level.

Elementary

SILK SCREEN

Biegeleisen, J. Silk Screen Techniques. New York: Dover, 1942. 187pp.

An interesting and easy to understand book that includes the origin and development of stenciling, along with a description of the basic equipment and methods for preparing the stencils.

Teacher Reference

Eisenberg, James. Silk Screen Printing. Illinois: McKnight, 1957. 91pp.

This book gives the fundamentals needed to pursue the art of silk screen printing. It includes new techniques and emphasizes homemade equipment.

Teacher Reference

Heller, Jules. Printmaking Today. New York: Holt, Rinehart & Winston, 1958. 261pp.

The author presents information for many levels of printmaking. Some of the topics are lithographs, woodcuts, etchings, and silkscreen.

Teacher Reference

Ohio I.A.A. Basic Course In Screen Printing.

This book is primarily for the instruction of an adult evening course in silk screen techniques. It is an accelerated course and is based on the use of existing art work rather than on original creations.

Teacher Reference

SOUND

Anderson, Dorothy S. Junior Science Book of Sound. Illinois: Garrard Press, 1962. 62pp.

This text explains how sound is made and how it travels. Experiments with sound are shown with diagrams.

Elementary

Branley, Franklyn. Rusty Rings a Bell. New York: Crowell, 1957. 26pp.

This is a pictorial story for children concerning the science of making a bell ring from the power in a battery.

Elementary

Brinton, Henry. Sound. New York: Day, 1963. 48pp.

The author explains how sounds are made, how they travel in waves, difference between high and low noises and how to reproduce sounds on records.

Intermediate

Burlingame, Roger. Out of Silence Into Sound. New York: The Macmillian Company, 1964.

This book tells the story of a man who got the knowledge he needed and went on to perfect the first telephone.

Today the Bell Laboratories - the descendant of the inventor's own workshop - are responsible for the wonders of radio astronomy and Telstar.

Upper

Keen, Martin. The How and Why Wonder Book of Sound. New York: Grosset and Dunlap, 1962. 48pp.

Nature of sound, measuring sound, reflected sound, musical instruments, living sound organs, sound communications, ultrasonics, and supersonics are dealt with in this book. Pictures are colorful and reading is at a child's level.

Intermediate

Kettelkamp, Larry. The Magic of Sound. New York: Morrow, 1956. 62pp.

The author explains the many aspects of the phenomenon of sound in our daily life. Detailed descriptions of procedures for performing basic experiments in sound are given.

Markey, Dorothy. Explorer of Sound, Michael Pupin. New York: Messner, 1964. 191pp.

Michael Pupin changes from a penniless immigrant to a famous inventor. The Pupin coil made long distance telephone lines possible, and his electronic resonator that amplified sound changed the face of America.

Upper

Meyer, Jerome. Sound and Its Reproduction. New York: World Publishing Company, 1964. 64pp.

The author develops the following concepts of sound: wave motion, frequency of sound, loudness of sound, how to record sound, how our ear receives sound waves, how our vocal cords make sound, echoes, and resonance. Many illustrations and experiments are given.

Intermediate

Miller, Lisa. Sound. New York: Coward-McCann, Inc., 1965. 42pp.

The scientific concepts of sound are introduced by using everyday, familiar happenings. Abstract terms such as pitch, frequency and wave lengths are introduced through simple, colorful illustrations and simple explanations easily understood by primary ages.

Elementary

Pine, Tillie S. Sounds All Around. New York: Whittlesay House, 1958. 46pp.

What makes sound? Why are there sounds? These are a few of the questions answered by the author. Many experiments are included to illustrate various points concerning sound.

Elementary

Podendorf, Illa. True Book of Sounds We Hear. Chicago: Children's Press, 1955. 47pp.

A picture on every page; large type. Book relates how we hear sounds, how animals hear and just where their ears are; also, man, and animals, and things make sounds. The book ends with the meaning sounds can have. Good motivation.

Elementary

Reuban, Gabriele H. What Is Sound? New York: Benefic Press, 1960. 40pp.

Pictures and text illustrate how sounds are made and received.

Elementary

Sootin, Harry. Science Experiments With Sound. New York: W. W. Norton & Company, 1964. 88pp.

Fifty or more experiments on: vibrations and sound, the reflection of sound waves, refraction of sound, diffraction of sound, natural vibrations and resonance, tone quality, vibrating flames, musical intervals, vibrations of rods and wires, the xylophone, and vibrations of bell-shaped bodies, Savart's wheel, a siren disk, and the Doppler effect are also included. Each experiment can be carried out with simple, inexpensive equipment. Detailed illustrations.

Upper

Tannenbaum, Harold. We Read About Sounds and How They Are Made. New York: Webster, 1960. 24pp.

An easy to read book for children on the various sounds and how they are made.

Elementary

Windle, Eric. Sounds You Cannot Hear. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963. 69pp.

This is the story of ultrasonics, the world of silent sound. A few of the topics developed are: how these sounds were discovered, how sound waves are used to land airplanes, how hurricanes are located and how television pictures are sent across the ocean.

Intermediate

SPACE TRAVEL

Agle, Nan Hayden. Three Boys and Space. New York: Charles Scribner, 1962. 159pp.

A fiction in which three boys become involved in and excited about the Space Age. The motivation stimulated by the appearance on TV of seven astronauts. A model rocket became their goal which they constructed from an old hot water heater. They did research in the library to help them understand the principles involved.

Intermediate

Branley, Franklyn M. A Book of Sattellites for You. New York: Thomas Y. Crowell Company. 80pp.

An interesting book for young children interested in science and astonomy.

Elementary

Brooks, Walter R. Freddy and the Space Ship. New York: Alfred A. Knopf, 1953. 262pp.

A fiction involving the launching of a homemade ship. The imaginary destination is Mars. Talking animals add to the fantasy.

Intermediate

Cameron, Eleanor. Mr. Bass's Planetoid. Boston: Little, Brown, & Company, 1958. 288pp.

The discovery of a new element leads to a frantic search and a chase. The boys take a rocket to an island in space.

Upper

Cameron, Eleanor. A Mystery For Mr. Bass. Boston: Little, Brown, & Company, 1960. 229pp.

A fiction which involves two boys and two inventors from another planet. The boys have a space ship which they made and they take off for the mushroom planet.

Upper

Cameron, Eleanor. Stowaway to the Mushroom Planet. Boston: Little, Brown, & Company, 1956. 226pp.

Horatio Peabody arrives to give a lecture and does some sleuthing on the side. The boys take their first flight and have a narrow escape from the mushroom people.

Upper

Cameron, Eleanor. The Wonderful Flight to the Mushroom Planet. New York: 1954. 214pp.

A fiction involved two boys who constructed a space ship with a scientist, Mr. Bass. The flight in the space ship to the Mushroom Planet proved exciting.

Upper

Colby, Carroll B. Our Space Age Jets. New York: Coward-McCann, 1959. 48pp.

Contains photographs and scale drawings of twenty-three jet fighter planes with information on speed, bomb load, engine, ceiling, and range.

Intermediate

Coombs, Charles. Project Apollo. New York: William Morrow & Company, 1965. 94pp.

An accurate and exciting account of the proposed journey to the moon from lift-off to the water landing on the earth's surface. On this first manned moon flight, a unique three-part spacecraft will be used. It will consist of the command module, the service module, and the lunar excursion module, commonly called the "bug." The author explains exactly how it will be powered; he also describes the bug's landing on the moon, its rendezvous with the command module that remains in orbit around the moon, and the dangerous re-entry into the earth's atmosphere.

A few of the photographs are of actual equipment; most are of artist's concepts of the mission. Index.

Intermediate

Coombs, Charles. Project Mercury. New York: Morrow, 1960. 62pp.

A clearly written and illustrated text of the problems facing a man being launched into orbit in a space capsule.

Intermediate

Crosby, Alexander L. The World of Rockets.

A book all about rockets for young readers desirous of knowing more about rockets and the space world. Tells about astonauts and their responsibilities. Illustrated.

Elementary

Crosby, Alexander L. and Larrick, Nancy. Rockets Into Space. New York: Random House, 1959.

An interesting story that begins with the use of gun powder in China to our present day rockets and satellites.

Also includes plans to build a space station, a trip to the moon and Mars.

Illustrations are good.

Intermediate

Hyde, Margaret. Off Into Space. New York: McGraw-Hill, 1966. 63pp.

Book on space gardens, space menus, space taxis, space stations, and the moon.

Intermediate

Johnson, Crockett. Harold's Trip to The Sky. New York: Harper & Row, 1957. 59pp.

An enjoyable, light, humorous book with much imagination. Harold with a purple crayon draws his way to Mars on a fun adventure. Kindergarten children and pre-school should enjoy this youngster. Older children will enjoy the humor and imagination included. Picture on every page - done with purple and white.

Elementary

King, Henry C. Our World in Space. Philadelphia: Macrae Smith Company, 1964. 90pp.

This book is an explanation of astronomy with a particular emphasis on the sizes, distances and movements of our solar system and the rest of the universe. The author explains the realm of astronomy in terms of the more familiar phenomena of the everyday world: the known universe can be imagined in terms of dimes (representing galaxies) sprinkled through a mile of air; the distance to the moon can be understood by realizing how long it would take an express train to get there at 60 m.p.h.; and the expanding universe can be demonstrated by a boy blowing up a balloon covered with dried spots of ink. Black and white illustrations.

Intermediate

Kondo, Herbert. Adventures in Space and Time. New York: Holiday House, 1966. 93pp.

Einstein's theory of relativity, motion, space and time. Has index and suggested further reading list.

Intermediate

MacGregor, Ellen. Miss Pickerell Goes to Mars. New York: McGraw-Hill Book Co., 1953. 123pp.

A fiction about a geologist who discovers a spaceship in the pasture. The scientific interest in outer space could be stimulated by this adventure.

Intermediate

Maisak, Lawrence. Survival on the Moon. New York: Macmillan Co., 1966. 159pp.

Has glossary and index and illustrations. Book on moon, eclipses, atmosphere, algae, sources of water, food, dust and meteorites, temperature, radiation, working on the moon and lunar travel. Has appendix and further suggestions for reading.

Upper

Russell, Salveg Paulson. From Rocks to Rockets. New York: Rand McNally & Co., 1960. 60pp.

Development of technological ideas from stone age to modern times.

Elementary

Scharff, Robert. Into Space with the Astronauts. New York: Grosset and Dunlap 1965.

The story tells about the men that become astronauts. The preparations they must make and the knowledge they must have to travel in space. It also tells about plans to take a trip to the moon. Illustrations and print are good.

Intermediate

Slobadkin, Louis. Spaceship Returns to the Apple Tree. New York: The Macmillan Co., 1958.

This story would be liked by all children. Children would certainly like to try to make a telegraph . The travels Eddie had with his friend could be traced on a map. Marty and Eddie saw Washington, D.C., Miami Beach, Boston, New Orleans, Florida and California.

Intermediate

Sonneborn, Ruth. The Question and Answer Book of Space. New York: Random House, 1965.

This is a book about space, rockets and satellites. It also tells about the requirements necessary to become an astronaut and about a trip to the moon. Print and illustrations are good.

Intermediate

Stambler, Irwin. Orbiting Stations. New York: G.P. Putnam's Sons, 1965. 93pp.

An excellent book about our space age. The author begins with a discussion of space, ferries, the vehicles needed to transport men and equipment to the station. He continues with the Titan III booster system, the Dyna-Soar program, and the developmental history of the Manned Orbital Laboratory (MOL) with all of its design problems.

All of the phases leading to the selection and training of the crew and the fuel types are told in this up-to-date account of orbiting stations. Illustrated with photographs.

Upper

Walters, Hugh. Expedition Venus. New York: Criterion, 1963. 191 pp.

The fate of the world depends on Chris Godfrey's suspense-filled flight to Venus and their attempts to cope with a deadly grey, creeping fungus.

Upper

Walters, Hugh. Mission to Mercury. New York: Criterion, 1965. 189pp.

Four men and one woman make the dangerous flight to Mercury, where they are greeted with extreme cold.

Upper

Wilson, Hazel. Herbert's Space Trip. New York: Alfred A. Knopf, 1965. 160 pp.

Story about Herbert Yudon who goes to an unknown planet in his experimental rocket; it tells of his adventures when he arrives and how he copes with the people.he finds there, who think he is inferior and to whom he has to prove that he is intelligent.

Upper

Winders, Gertrude Hecker. Robert Goddard: Father of Rocketry. New York: John Day Company, 1963. 175pp.

Biography of Robert H. Goddard, pioneer inventor of rockets, based chiefly on his boyhood diaries. Important facts in Goddard's career: his early experiments, rocket tests which brought ridicule and discouragement, his research in New Mexico, association with Lindbergh, his government service, his ability to work alone, and his productive imagination.

Intermediate

Wollheim, Donald. The Secret of the 9th Planet. New York: Holt, Rinehart and Winston. 201pp.

A science fiction adventure of a high school senior who is on the first spaceship which circumnavigates the solar system. This adventure is based on scientific fact.

Upper

Yates, Raymond. Faster and Faster. New York: Harper, 1956 139pp.

This is the story of speed. It progresses from human speed, birds, bullets, and jets into the space age.
Grades: Upper

TELEVISION, TELEPHONES, AND RADIO

Bendick, Jeanne. Television Works Like This. New York: McGraw-Hill, 1959. 63pp.

A publication which gives the elementary child a thorough background on television. The child learns where the picture begins; about the people involved, special effects, types of film and tapes, mobile television, programs, and finally color television. The book begins with a vocabulary of new words.
Intermediate

Coombs, Charles. Window on the World. New York: World Publishing, 1965. 122pp.

This book takes you behind the scenes to see the "organized confusion" needed to produce a television show.

Corbett, Scott. What Makes TV Work? New York: Little, Brown & Co., 1965. 44pp.
This text takes you inside the television camera and explains what happens to the picture. He also discusses the intricacies of color.
Grades: Elementary

David, Eugene. Television and How It Works. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962. 70pp.
The author tells in narrative form how the television was developed; how television programs originate and reach the television screen; and how TV will be used in the future.
Intermediate

Dudley, Nancy. Linda Goes To A TV Studio. New York: Coward-McCann, Inc. 44pp.
This is a story about a second grade girl who wins a trip to a TV studio as a spelling test prize. It involves her encounters with some rather cold blooded TV people, and her experiences with them and a Mexican boy whom she helps get over his nervousness in front of the cameras. Has a few technical words as part of vocabulary. Very few illustrations, all black and white.
Intermediate

Knight, David. Let's Find Out About Telephones. New York:
Franklin Watts, 1967. 52pp.

The author tells how telephones basically work, who uses them, the invention of the telegraph and the telephone, the use of directories, push-button phones, how phones save time. This is accompanied by illustrations.

Elementary

Morgan, Alfred. The Boy's Second Book of Radio and Electronics.
New York: Charles Scribner's Sons, 1957. 268pp.

An excellent book for those who do not have a wide background in radio and electronic sciences. There is useful and interesting information about electronic devices, as well as detailed directions and working drawings for easily made radio receivers and other electronic apparatus.

Intermediate

Smith, Joseph. Fun Time Radio Building. Chicago: Childrens
Press, 1961. 63pp.

The author lists step by step the procedures to follow in making a basic crystal detector and then how to make and use a short wave receiver and transmitter.

Upper

Salomon, Louis. Telstar. New York: McGraw-Hill Book Company,
Inc., 1962. 62pp.

Brief history of the launching of the satellite Telstar. Notable references made of the men who successfully launched it are included. Illustrated with photographs.

Intermediate

Stoddard, Edward. The First Book of Television. New York:
Watts, 1955. 61pp.

A general approach to the television industry, from the initial signal to the sponsor, is illustrated for young readers.

Elementary

Tannenbaum, Harold. We Read About Television and How It Works.
New York: Webster, 1960. 24pp.

This is an easy to read book about television and why it works.

Elementary

TIME & CLOCKS

Ardizzone, Edward. Johnny The Clockmaker. New York: Henry Z. Walck, Inc, 1960. 46pp.

Story in words and pictures. Large print.

Elementary

Asimor, Issac. The Clock We Live On. New York: Abelard - Schuman, 1959. 165pp.

The author gathered facts from many fields of knowledge to present a comprehensive story of time. Some of the categories presented are the numbering of years, days of the week, and the earth's rotation.

Upper

Bothwell, Jean. The Mystery Clock. New York: Dial Press, 1966. 121pp.

Fiction about a boy who made a clock. How he was called upon to solve a mystery concerning a grandfather's clock that stopped upon the death of the owner.

Intermediate

Bradley, Duane. Time For You. New York: J. B. Lippincott Company, 1960. 108pp.

This book shows the development of the Julian and Gregorian calenders as well as the concepts which underlie the Egyptian, Mayan, Greek, Japanese and other systems of measuring time. Illustrated diagrams.

Upper

Burlingame, Roger. Dictator Clock. New York: Macmillian, 1966.

Burlingame shows development of methods of keeping time—sundial, fire clock, pendulum, wheel, train, etc. He shows what discovery of rockets and development of 4th dimension theory has done to changes in telling time. The print is small. The diagrams and pictures are in black and white.

Intermediate

Gleick, Beth. Time Is When. New York: Rand - McNally, 1960. 40pp.

The second, minute, hour, day, week, month, and year are taken up in turn. The text is short and the concepts are clearly explained and illustrated.

Elementary

Hagan, Marshall. My Book of Time. Maryland: Ottenheimer Publishers, Inc., 1961. 26pp.

Very colorful book written in large clear print. A general elementary history of time from the sun to the atomic time keepers. Also, there is an explanation of time zones, Greenwich, International Dateline, time in nature, geological time to the challenge of space time. Good project ideas.

Elementary

Liberty, Gene. The How and Why of Time. New York: Wonder Books, 1963.

This is an interesting story that tells of man's efforts down through the ages to find some practical way of measuring time. Print and illustrations are good.

Intermediate

Maloney, Terry. The Story of Clocks. New York: Sterling, 1960. 48pp.

This is a complete study in the development of clocks. It covers all the different clocks used from the candle clock to the atomic clock of today.

Elementary

Neal, Harry. The Mystery of Time. New York: Messner, 1966. 183pp.

This book tells the story of man's relationship to time.

Upper

Reck, Alma Kehoe. Clocks Tell The Time. New York: Scribner, 1960. 46pp.

The text and pictures are combined to tell the story of time keeping devices of man through the ages.

Elementary

Slobokin, Louis. The Late Cuckoo. New York: Vanguard Press, 1962. 36pp.

A Swiss clockmaker must solve the problem of whether 122 cuckoos are right and 123rd one is wrong, or whether the 123rd is right and the rest are all wrong.

Intermediate

Williams, Jay. The Question Box. New York: Norton & Company, 1965. 47pp.

Maria explores a large clock tower and finds a mysterious little man. She finds out how the clock works.

Intermediate

TOOLS & MEASURING

Adler, Irving. The Story Of The Nail. New York: John Day Company, 1961. 48pp.

Includes a brief history of nails and what has to be done to make them. Goes into story of iron and steel--how it is mined and refined. It also shows their many uses. Good illustrations and a small dictionary are in rear of book.

Intermediate

Beim, Jerrold. Tim And The Tool Chest. New York: William Morrow & Company, 1951. 46pp.

A fiction involving a boy who learned the skill of handling his own tools and building his own playhouse. The book is set in large primary type for easy reading. The pictures illustrate the text in a clear related pattern.

Elementary

Glenn, Harold. Exploring Power Mechanics. Illinois: Bennett, 1962. 140pp.

This book tells all about power--its history, fundamentals of electricity, parts of small engines, and a section on safety.

Teacher Reference

Goldstein, Rhoda. Tools of The Scientist. New Jersey: Prentice Halls Inc., 1963. 65pp.

How the first telescope was discovered, the bathyscaphe, the geiger counter, the seismograph, the uses of space probe satellites, the atomic reactor and accelerator.

Intermediate

Hatcher, Charles. What Shape Is It? New York: Duell, Sloan & Pearce, 1963.

Using straight lines first, then circles to show the many things than can be made. Solids are explained next. The question-answer pages in the back would prove valuable to children.

Intermediate

Hatcher, Charles. What Size Is It? New York: Duell, Sloan & Pearce, 1966. 32pp.

A history of various measures and how man measures various things. Riddles and pictures to explain points.

Intermediate

Hunt, DeWitt. Shop Tools. New York: Van Nostrand, 1958. 252pp.

The author gives methods of tool and machine maintenance. Areas covered are sharpening, lubrication, and marking of tools.

Teacher Reference

Leavitt, Jerome. The True Book of Tools for Building. New York: Children's Press, 1955. 45pp.

This book presents 15 of the most common hand tools that children use. Sketches and basic information are provided for the care and use of each tool.

Elementary

Moore, William. How Fast, How Far, How Much? New York: G. P. Putnam's Sons, 1966. 128pp.

The author explains how human speed is measured, how scientists measure depth of the earth, and how they measure the age and weight of things. There are explanations of how television, radio, radar, etc. are used to measure. There is a chapter of projects that can be made.

Upper

Toliver, Raymond. Care And Use Of Hand Tools. New York: Wiley, 1944. 93pp.

This is an elementary manual that describes and illustrates the handling of common tools used in machine shops.

Intermediate

TRAINS

Burleigh, David Robert. How Engines Talk. New York: Follett, 1961. 31pp.

This book contains accurate information that will increase the interest of the children. They learn about the messages of train whistles from the engineer to other workers on the train, as well as warning signals to people and animals along the track.

Elementary

Elting, Mary. Trains At Work. New York: Harvey House Inc., 1962. 83pp.

Story of trains and how they are used.

Elementary

Gramatky, Hardie. Homer And The Circus Train. New York: Putnam, 1957. 60pp.

This is the story of a lonely red caboose who saves the circus animals when the engine breaks down and gets new prestige with a permanent job as the circus caboose.

Elementary

Hamilton, Franklin. First Book of Trains. New York: Franklin Watts, Inc., 1956.

This story tells about three types of trains, passenger, freight, and work trains. Purposes of each type given in full detail. Also, railroad terms and signals, also duties of employees of the railroad. Pictures in color.

Intermediate

Harvey, Derek. Monorails. New York: Putnam, 1965. 94pp.

A history of the monorail is presented along with its present and future uses.

Elementary

Hubbard, Freeman. Great Trains of All Times. New York: Grosset & Dunlap, 1962. 155pp.

Book includes stories of famous trains and a short history of trains in the U.S. and in trains around the world. It also includes special jobs that trains have done. Wonderful illustrations and nice size print.

Upper

Otto, Margaret. The Little Old Train. New York: Alfred A. Knopf, 1960. 15pp.

This delightful story is about a train which had to stop in the middle of its run because a cow has laid across the tracks. It describes the passengers and their problems about having to get where they are going, and how they get the cow off the track. Excellent for oral reading. Good illustrations.

Intermediate

Slobodkin, Louis. Clear The Track For Michael's Magic Train. New York: Macmillan Company, 1966. 44pp.

A delightful story written in poetry form about the wonderful imagination of a little boy on a train who pretends to be all the workers on the train and where it goes. Very good for reading aloud.

Elementary

Zaffo, George. Big Book of Real Trains. New York: Grosset & Dunlap, 1949. 26pp.

Full page pictures complement the simple descriptions of different types of cars on a train.

Elementary

TRANSPORTATION & NAVIGATION

Bechdolt, Jack. Going Up. New York: Abington, 1948. 128pp.

An unusual book telling the history of vertical transportation in easy-to-understand terms. It goes from ladders to airplanes.

Intermediate

Cleary, Beverly. The Mouse And The Motorcycle. New York: William Morrow & Company, 1965. 159pp.

Keith makes friends with Ralph, a mouse, who rode Keith's toy motorcycle in and out of numerous adventures.

Intermediate

Dines, Glen. The Fabulous Flying Bicycle. New York: Macmillan Company, 1960. 163pp.

Gerald Barnes invents a flying bicycle to escape the crowded streets of the town.

Intermediate

Gramatky, Hardie. Hercules. New York: Putnam's Sons, 1940. 76pp.

Hercules, an old fashioned fire engine is replaced by a new, more powerful one. When the new fire engines break down, Hercules dashes to the fire and saves the Mayor.

Elementary

Helman, Hal. Navigation: Land, Sea & Sky. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966. 72pp.

This book describes the development of navigation, explaining the origin of certain technical words and instruments in such a way that grades 3 to 8 could understand. The pictures and digrams are blue, white, and black; print is large. There is an index of terms in the end. This book is simple to understand and technical enough to help in science and social studies.

Intermediate

Lewellen, John. You And Transportation. Chicago, Illinois: Children's Press, 1965. 63pp.

A dramatic and often humorous account of the growth of cargo transportation from early pack trails and waterways to rails, roads, and skyways.

The story of the United States as it grows from a fringe of colonies to one of the biggest and most productive nations in the world. Units include boats, trains, trucks, cargo planes, and pipelines. Illustrated.

Intermediate

Merrill, Jean. The Pushcart War. New York: William R. Scott, Inc., 1964. 223pp.

A fiction about pushcart peddlers, trucks, and taxis in New York who compete for priority of the streets. Pushcarts were first constructed and sold to people interested in selling food and various items from door to door.

Upper

Posell, Elsa Z. The True Book of Transportation. Chicago, Illinois: Children's Press, 1957. 47pp.

Large print and pictures on every page in either red or yellow. This is a primary history of transportation with comparisons of new and better methods. It discusses all methods of traveling on land, sea, and air. Good motivation for moving into other fields in more detail.

Elementary

Stevens, Leonard A. The Trucks That Haul By Night. New York: Thomas J. Crowell Company, 1966.

This is a story about trucks that carry freight over highways. It tells of the responsibilities of the driver and explains the complete trip. Illustrations in black and white. Print is good.

Intermediate

Zimnik, Reiner. The Bear On The Motorcycle. New York: Atheneum, 1963. 22pp.

The motorcycle riding bear becomes disallusioned when someone laughs at his stupid trick of riding around in a circle, so he takes off for a ride through the city.

Elementary

WHEELS

Buehr, Walter. Story of The Wheel. New York: Putnam, 1960.

This is a pictorial story of the wheel and how it changed our lives.

Elementary

Clymer, Eleanor. Wheels. New York: Holt, Rinehart & Winston. 1965. 40pp.

History of man's most valuable inventions is traced from earliest beginnings to present day. Discusses archeological excavations and many illustrations to show the uses of the wheel.

Elementary

Shapp, Martha. Let's Find Out About Wheels. New York: Franklin Watts, Inc., 1962. 41pp.

A book about wheels to help children understand the importance of wheels in modern living. Children learn that the wheel is basic to almost everything mechanical. Illustrated.

Elementary

WOODWORKING & GENERAL SHOP

Adler, Irving & Ruth. Tree Products. New York: John Day Company, Inc., 1967. 48pp.

The authors show that trees can be both beautiful and useful. They are a source of many products: fruit, nuts, sap, lumber, charcoal, tar, cork, etc. Drawings are in two colors on almost every page.

Intermediate

Anderson, Arthur. Designer's Notebook. Illinois: McKnight, 1966. 228pp.

The purpose of this book is to make you more aware of the elements and principles of industrial design so that you can apply your knowledge to the design of your project.

Teacher Reference

Bauer, Carlton. General Shop I. Milwaukee: Bruce, 1959. 251pp.

By learning to make interesting projects, you learn skills of drawing, planning, size, assembly lines, layout, and use of tools.

Teacher Reference

Capron, J. Hugh. Wood Laminating. Illinois: McKnight, 1963. 94pp.

Wood laminating consists of gluing parallel-grained layers of wood together so that the new wood has more strength. The book tells about laminated wood products, how they are made, and projects that children can make.

Teacher Reference

Clemons, Frank. Practical Woodworking Projects for Today. Milwaukee: Bruce, 1957. 91pp.

Thirty-five attractive items are presented for the wood maker to make. Excellent photographs and sketches show how to bring the projects to completion.

Upper

Feirer, John. I.A. Bench Woodworking. Illinois: Bennett, 1959. 208pp.

This book teaches about the woodworking industry, including sources of lumber, how lumber is made into plywood, and how wood projects are designed and produced.

Teacher Reference

Feirer, John. Industrial Arts Woodworking. Illinois: Bennett, 1965. 432pp.

Fundamental processes in hand woodworking is described with stress on student participation in shop activities. Complete information about tools, materials, and ways to use them is illustrated well with diagrams and photographs.

Teacher Reference

Fryklund, Verne. Bench Woodworking. Illinois: McKnight, 1955. 152pp.

Information on basic woodworking operations, a number of problems, and important technical information make this book a good course in the fundamentals of woodworking.

Teacher Reference

Gerbracht, Carl. I.A. For Grades K-6. Milwaukee: Bruce, 1959. 160pp.

Topics covered here are the place of industrial arts in the elementary schools, tools, equipment, and supplies, projects and activities. There is a very good listing of projects and field trips for each of the elementary grades.

Teacher Reference

Gottshall, Frank. Woodwork For The Beginner. Milwaukee: Bruce, 1952. 139pp.

Easy-to-make woodworking projects for the beginner are diagramed thoroughly. There is little or nothing left to guesswork.

Upper

Groneman, Chris. General Shop. New York: McGraw-Hill, 1954. 307pp.

This book is useful as a general shop course or for those interested in home maintenance, occupational therapy, arts and crafts, hobby groups, and home craftsmanship. There are sections on drawing, woodworking, metalworking, electricity, plastics, and leather.

Teacher Reference

Groneman, C. General Woodworking. New York: McGraw-Hill, 1959. 326pp.

The author covers many interesting topics that are generally not given a place in woodworking: machine tools, upholstery, plywood construction, historical development, and design trends in furniture.

Teacher Reference

Hammond, James. *Woodworking Technology*. Illinois: McKnight, 1961. 411pp.

This is a technical and cultural text about the use and knowledge of tools, materials, processes, mechanics, and design. The properties, characteristics, and uses of different types of wood.

Teacher Reference

Haws, Robert. *Manufacturing In The School Shop*. Chicago, Illinois: American Technical Society, 1960.

It consists of pertinent information about manufacturing and production methods.

Leavitt, Jerome. *Carpentry For Children*. New York: Sterling, 1959. 89pp.

Easy-to-follow directions and clear diagrams of 15 projects makes this an instructive and entertaining book for the reader.

Elementary

Leeming, Joseph. *Fun With Wood*. Chicago, Illinois: Spenser, 1942. 111pp.

This is a book about whittling and carving wood. There are many diagrams to illustrate the making of useful gifts.

Intermediate

Lewis, Roger. *Woodworking*. New York: Knopf, 1952. 44pp.

The main topic is the care and use of tools, but the author includes a number of projects to make.

Elementary

Lincoln, Martha. *A Workshop Of Your Own*. New York: Houghton - Mifflin, 1955. 214pp.

This book reveals the problems of setting up a workshop plus many ideas for activities.

McGinnis, Harry. Woodwork Projects. Illinois: McKnight, 1959. 149pp.

The projects given are for the beginner in woodworking. Detailed diagrams are given for each project, along with a photograph of the finished object, but no work procedure is listed. The experience of planning is, therefore, left for the student.

Upper

Miller, John. General Shop II. Milwaukee: Bruce, 1962. 292pp.

Directions and diagrams are given for the construction of wood, metal, electric, graphic arts, ceramics, leather, and plastic projects. There is a glossary for each unit.

Teacher Reference

Moore, William. Fun With Tools. New York: Random House, 1957. 64pp.

This is a general book about woodworking and includes many illustrated projects.

Elementary

Olson, Delmar. I.A. For The General Shop. New York: Prentice-Hall, 1954. 301pp.

The author acquaints the students with the basic materials, tools, machines, processes, occupations, and industries. Projects are described for the areas of industrial drawing, wood, metal, electrical, graphic arts, and ceramic industries.

Teacher Reference

Soderberg, George. Finishing Materials And Methods. Illinois: McKnight, 1959. 382pp.

Materials and methods of finishing types and processes are explained in a direct language with practical illustrations. It can be used to teach finishing and of painting and decorating in the vocational and industrial education classes at the high school level.

Teacher Reference

Sullivan, George. How Do They Make It? Philadelphia: Westminster Press, 1965. 139pp.

The author reveals the varied manufacturing processes used in the production of twenty food and household products. It also tells about the changes that have taken place in production.
Upper

Wolansky, William. Woodworking Fundamentals. New York: McGraw-Hill, 1962. 167pp.

This book should be useful to anyone who wishes to further his knowledge of materials, tools, machines, cabinet structures, furniture design, and finishing materials. It explains how to read and interpret drawings, illustrations, and printed material.
Teacher Reference

ADDITIONAL TITLES

Hartman, Gertrude. Machines And The Men Who Made The World Of Industry. New York: Macmillan Company, 1965.

Yates, Raymond F. The Young Inventor's Guide. New York: Harper & Brothers, 1959.

Becker, Beril. Mechanical Man. New York: G. P. Putnam's Sons, 1959.

Basford, Leslie & Kogan, Philip. 5 Volumes - Technology From Foundations of Science Library. Boston: Ginn & Company, 1966.

The Metallic Skills.
Industrial Processing.
Engineering Technology.
Automobile Engineering.
The Inventive Genius.

Fletcher, Pratt. Famous Inventors And Their Inventions. New York: Random House, 1955.

Neal, Harry E. From Spinning Wheel To Spacecraft. New York: Julian Messner, 1964.

APPENDIX I*

ELEMENTARY INDUSTRIAL ARTS BASIC CONTENT, THEORY, AND PHILOSOPHY

American Association of Teachers Colleges. School and Community Laboratory Experiences in Teacher Education. Prepared by the Sub-Committee of Standards and Surveys, 1948. 340 pp.

The text is concerned with the involvement of the prospective teacher in actual laboratory experiences in the early training or teacher education program, implicating the activity concept in teacher preparation.
Specific references to professional courses in industrial arts for the elementary school teacher are made on pages 48 and 56.

Beck, Robert H., Walter Cook and Nolan C. Kearney. Curriculum in the Modern Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1960. 513 pp.

Chapter 19 presents the case of "Fine Arts and Crafts," in the elementary school curriculum. Author treats the closely related areas of art and industrial arts in the elementary school as one. Briefly mentions the use of a unified arts program as a means of advancing the activity program to advantage in the elementary grades.

Bennett, Charles A. History of Manual and Industrial Education up to 1870. Peoria: Charles A. Bennett Company, Inc., 1926. 461 pp.

Provides a great deal of useful background information on many of the people and movements responsible for our present day industrial arts programs, both in high school and the elementary school. Perhaps one of the most complete books of its kind.

Bennett, Charles A. History of Manual and Industrial Education 1870 to 1917. Peoria: Charles A. Bennett Company, Inc., 1937. 566 pp.

A continuation of an earlier volume "History of Manual and Industrial Education up to 1870." Perhaps more meaningful to elementary school teachers interested in more recent information on industrial arts movements, because much of the book is devoted to Manual Training in the United States, with a section specifically set aside for manual training in the elementary school.

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* Annotations, with permission of Author, were taken from Stunard, E. Arthur. An Annotated Bibiliography of Books, Pamphlets and Articles for Industrial Arts in the Elementary School, The American Council for Elementary School Industrial Arts, N. E. A. Building, Washington, D. C., Undated.

Bonsor, Frederick G., and Lois C. Mossman. *Industrial Arts for Elementary Schools*. New York: Macmillan Company, 1939. 491 pp.

One of the early writings dealing with the "modern concept" of industrial arts in the elementary school. This book has served well as the basis of our present day philosophy for correlation of industrial arts activities with subject matter content.

Part one deals with the thought behind industrial arts at this level, and part two covers the application of these principles through suggestion of a number of possible studies that could be undertaken in each of the grades from one through six.

Byram, Harold M. and Ralph C. Wenrich. *Vocational Education and Practical Arts in the Community School*. New York: The Macmillan Company, 1956. 512 pp.

Excellent background information for anyone interested in the relationship of vocational education and practical arts to the community school concept of education. Presents some interesting insight into the community school, and the many aspects of such a program. Of especial interest to the elementary teacher would be chapters nine, ten, and eleven, which concern themselves specifically with the elementary school program.

Caswell, Hollis L. and Arthur W. Foshay. *Education in the Elementary School*. New York: American Book Company, 1957. 430 pp.

An elementary curriculum book with some specific references to an experience curriculum and the idea of integration as it should relate to the activity program (pp. 250-256). The elementary school teacher will find this section helpful in establishing a philosophy for the activity program in her classroom.

Cole, Percival R. *Industrial Education in the Elementary School*. New York: Houghton Mifflin Company, 1914. 64 pp.

This book provides an interesting insight into industrial education in early times and shows how the program at the elementary level has undergone a developmental period. Excellent reading for anyone interested in the historical background of this type of program, as compared to present day philosophy.

Gerbracht, Carl and Robert J. Babcock. *Industrial Arts for Grades K-6*. Milwaukee: Bruce Publishing Company, 1959. 160 pp.

An excellent reference for beginning an industrial arts program for K-6. It deals with such important points as: The Place of Industrial Arts in Elementary schools; Facilities, Equipment, Tools and Supplies; Basic Skills Projects; and a fine list of industrial arts activities for each grade K-6. The final chapter concerns itself with the role of the industrial arts consultant.

Gilbert, Harold G. Children Study American Industry. Dubuque: Wm. C. Brown Company, 1966. 211 pp.
An excellent resource book for elementary teachers interested in a wide variety of industrial arts activities for the classroom K-6. A chapter of Values and Procedures of industrial arts, is very helpful. Other chapters include: Development of Industry, Manufacturing Activities, Construction Activities, Communication Activities, Transportation Activities and Power Activities.

Gunther, Theresa C. Manipulative Participation in the Study of Elementary Industrial Arts. New York: Bureau of Publications, Teachers College, Columbia University, 1931. 58 pp.
Although written in the 1930's, this study presents a fine case for the use of manipulative activities in the elementary school classroom. The experiment was conducted under controlled conditions, and the methods as well as the findings are clearly presented and concluded.

Harrison, O. S. Industrial Arts and Handcraft Activities. Minneapolis: Burgess Publishing Company, 1959. 132 pp.
A consideration of the fundamentals of elementary school industrial arts program, basic philosophy of such a program, along with a good list of tools for handwork. The author spends some time in discussing the integration of handwork, as well as techniques of developing the activity unit. Good and complete examples of the activity unit are given.

Herrick, Virgil E. and others. The Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1956. 474 pp.
Chapter 12 deals with "The Arts in the Elementary School," including industrial arts activities, through implication, in such forms as using simple woodworking tools, construction and clay work placing the responsibility for use and instruction of these integrated activities on the classroom teacher rather than on the specialist.

Hildreth, Gertrude. Child Growth Through Education. New York: The Ronald Press Company, 1948. 437 pp.
A fine elementary school curriculum volume advocating the use of unified learning in our schools as the correct means of educating our children. The emphasis is on the activity concept of learning throughout the chapters of the book and would serve as an excellent reference for general philosophy of this kind of program in the elementary school.

Huggett, Albert J. and Cecil V. Millard. *Growth and Learning in the Elementary School*. Boston: D. C. Heath and Company, 1946. 414 pp.

Chapter 11 lists and explains a number of objectives of arts and crafts in the elementary school. The advantages and disadvantages of a unit and a correlated activity program are discussed, finally suggesting that the best of both be utilized wherever possible. The author is of the opinion that arts and crafts can best be used as a resource rather than a content of study for the elementary school.

Hurley, Beatrice D. *Curriculum for Elementary School Children*. New York: The Ronald Press Company, 1957. 402 pp.

The author considers all art experiences, whether it be painting or working with wood, as an essential contribution to the overall learning experiences of the elementary school child. What is generally referred to as art in this chapter could easily, in many cases, be considered industrial arts activities as well. The main consideration here is the creative interaction inherent in the manipulation of tools and materials.

Husbands, Kenneth L. (editor). *Teaching Elementary School Subjects*. New York: The Ronald Press Company, 1961. 474 pp.

The book is a compilation of chapters written by prominent people in their respective fields of elementary education. Chapters 18 and 19 were written by Mary-Margaret Scobey about arts and crafts experiences and their relationship to the whole elementary school curriculum. She presents objectives, materials and their uses and the scope of an integrated arts program. She considers the experiences of art, arts and crafts, and industrial arts as being very closely related.

Kerschensteiner, George M. *The Idea of the Industrial School*. New York: The Macmillan Company, 1913. 110 pp.

An interesting historical insight into the concept of industrial education in the early 1900's. The appendix is of particular interest in that it provides an example of what had been accomplished through industrial training of first grade children from the Munich, Germany elementary schools.

Lee, J. Murray and Doris May Lee. *The Child and His Curriculum*. New York: Appleton-Century-Crofts, Inc., 1960. 710 pp.

An elementary curriculum book containing many implications for industrial arts activities with some specific references to its place in the classroom on pp. 182, 183, 201, and 202.

Masengill, John P. *Selections in Philosophy and Psychology Relating to Industrial Arts Education*. Peoria: Bradley University, 1951. 226 pp.

A compilation of many fine readings dealing with the thought behind industrial arts today. After considerable reading, the author formulates twenty-eight principles with which industrial arts must be concerned if it is to add to the educational growth of the individual. This study shows that industrial arts is significant educationally with many implications for use of this area starting at the elementary level.

Melvin, A. Gordon. *Education a History*. New York: The John Day Company, 1946. 374 pp.

Part IV, which includes chapters 12, 13, 14, 15, 16 and 17, would serve the elementary teacher well as background material to further her understanding of the development of the activity program as we know it today. Many of the early founders of this philosophy are mentioned in these pages.

Moore, Frank C., Carl H. Hamburger, and Anna-Laura Kingzett. *Handcrafts for Elementary Schools*. Boston: D. C. Heath and Company, 1953. 324 pp.

The contents hold much useful information on organizing and administering a craft program in the elementary school. It would answer most questions one might have in regard to such a program. Various tools and materials are described, along with designs and patterns for many of the crafts.

Mossman, Lois C. *The Activity Concept*. New York: Macmillan Company, 1940. 197 pp.

This is deep considered thought in relation to the activity concept, brought about through working with colleagues at Teachers College, Columbia University. The elementary teacher will find this book especially helpful in trying to understand this basic philosophy as it relates to her and her classroom.

Newkirk, Louis V. *Integrated Handwork for Elementary Schools*. New York: Silver Burdett Company, 1940. 342 pp.

One of the early writings dealing with the integrated handwork philosophy for industrial arts in the elementary school. It is divided into two sections: one dealing with the general philosophy of handwork activities, as well as tools and materials; and the other providing many handwork ideas and techniques. Most crafts are included in the second section.

Otto, Henry J. Principles of Elementary Education. New York: Rinehart and Company, Inc., 1949. 430 pp.

An elementary curriculum book that, along with general curriculum problems, takes a good long look at activities and their use in the elementary grades. Chapter nine deals specifically with some of the many aspects of activity that should be utilized by the elementary school teacher.

Ragan, William B. Modern Elementary Curriculum. New York: Henry Holt and Company, 1960. 505 pp.

An elementary curriculum book with two sections specifically dealing with the activity program. Pages 112-133 discuss the advantages of "unified learning" and suggest some possibilities for activities as well as organization of this type of program. Pages 371-372 give a brief statement of the purposes of industrial arts in the elementary school curriculum.

Stratemeyer, Florence B. and others. Developing a Curriculum for Modern Living. New York: Bureau of Publications, Teachers College, Columbia University, 1947. 558 pp.

A curriculum book dealing with the elementary school in general, with some interesting insights into our industrial civilization and how the interdependence of man affects the school program. Several references toward providing effective experiences, as well as materials and equipment for maximum growth, are made. The pages most significant to the use of an activity program would be 34-50, 352-55, 418-26 and 459-64.

Wilber, Gordon O. Industrial Arts in General Education. Scranton: International Textbook Company, 1954. 401 pp.

One of the basic purposes of this book is to promote thinking about many of the problems of general education and particularly those in industrial arts. The elementary teacher would find this text valuable in that it could give him excellent background for the initiation of a program at this level.

APPENDIX II

List of Exhibit Books - For Faculty Use Only

FICTION

Russell, Solveig Paulson	How Shall We Ride Away?

NON FICTION

Adler, Irving	Magnets
Adler, Irving	Taste, Touch & Smell
Adler, Irving	Tree Products
Barr, George	Arithmetic for Billy Goats
Barr, George	Young Scientist & The Fire Department
Bendick, Jeanne	The Shape of The Earth
Braverman, Bob	Slot Car Racing
Buehr, Walter	The Magic of Paper
Buehr, Walter	Plastics: Man-Made Miracle
Burlingame, Roger	Dictator Clock: 5,000 Years of Telling Time
Chandler	Man The Inventor
Chester, Michael	Let's Go To Build A Suspension Bridge
Chester, Michael	Thomas Alva Edison, Inventor
Corbett, Scott	What Makes Light Go On?
Cousins, Margaret	The Story of Thomas Alva Edison
Crosby, Alexander L.	The World of Rockets
Eberle, Irmengarde	The New World of Rubber
Fogel, Barbara R.	What's The Biggest?
Freeman, Mae	A Book of Real Science
Grey, V.	Secret of The Mysterious Rays: Discovery of Nuclear Energy
Harris, M.	Getting To Know The World Meteorological Organization

NON FICTION (cont'd)

Hatcher, Charles	What Shape Is It?
Hatcher, Charles	What Size Is It?
Hays, Wilma Pitchford	Samuel Morse
Hellman, Hal	Navigation: Land, Sea & Sky
Hyde, Margaret	Off Into Space
Jolliffe, Anne	From Pots to Plastics
Knight, David	Let's Find Out About Magnets
Knight, David	Let's Find Out About Telephones
Kondo, Herbert	Adventures in Space & Time
Lavine, David	Under The City
Lewis, Alfred	The New World of Petroleum
Lidstone, John	Building With Balsa Wood
McFarland, Kenton D.	Airplanes: How They Work
Maisak, Lawrence	Survival On The Moon
Merriam, Eve	The Story of Ben Franklin
Moore, William	How Fast, How Far, How Much
Pearl, R.	Wonder World of Metals
Russell, S.	Wax In Our World
Shapp, Martha & Charles	Let's Find Out About Thomas Alva Edison
Sonneborn, Ruth A.	The Question & Answer Book of Space
Stevens, Leonard A.	The Trucks That Haul By Night
Stirling, Nora	Wonders of Engineering
Sullivan, George	How Do They Make It?
Wilson, Charles-Morrow	Deisel: His Engine Changed The World
Yerkow, Charles	Automobiles: How They Work